FINANCE' EDUCATION PROFESSIONS GOVERNMENT ALTRUISM

VOL. 1.

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WASHINGTON, D. C., MONDAY, JANUARY 20, 1913.

WHOLE NO. 6

FIRST ANNUAL MEETING

OF THE CHAMBER OF COMMERCE OF THE

UNITED STATES OF AMERICA.



Chairman of the House Con

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EDIT

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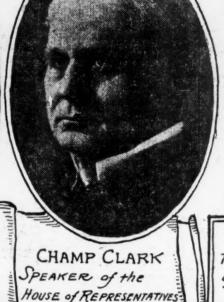








WM H. TAFT. PRESIDENT OF the UNITED STATES



HOUSE of REPRESENTATIVES



HARRY A. WHEELER, PRES. CHAMBER of COMMERCE of U.S.A.



REP. CARTER GLASS, VA. hairman Sub Committee of Banking and Currency



DR. CHARLES W. ELIOT, PRESIDENT-EMERITUS, HARVARD.

THREE GREAT ELEMENTS.

The call for the organization of the Chamber of Commerce of the United States of America came not as an inspiration, but an evolution. Such a great national force is born not in response to the will of an individual, nor the brilliancy of an idea, nor the genius of a plan, but because of a vital necessity that is found to exist sufficiently strong to impel business men to forget competition, to obliterate sectional lines, and to forego selfish gain in their desire for its creation.

There are three great elements in our national life which have much to do with its future development—commerce, labor, and agriculture. There are more than 2,000,000 of union workers engaged in the industries of our country, and they are a cohesive body. From their local groups to their State and their national organizations, they speak with a common voice of those things which they desire as being beneficial to labor. It is equally true of the agricultural interests. They are formed likewise into their local and up to their national groups until they also have a voice which, both in our State Legislatures and in the national Congress, is heard and obeyed, because of the cohesive force that these elements ave brought into our national life.

In the past ten years Chambers of Commerce and Boards of Trade have been formed in cities large and small over the length and breadth of this land, yet they have never operated except as independent units. Here and there they have recently gathered themselves together in State organizations; but for the most part these organizations, speaking to their State Legislatures or to the national Congress, have been able to speak only with the individual voice of a section or community or a single business interest. Is there any wonder that legislation has been enacted helpful to labor and to agriculture, while the commercial interests, organized as individual units, have been almost disregarded?

That is one reason why I believe the Chamber of Comerce of the United States will succeed and why I believe the ne was ripe for its organization. Not that the force thus eated shall contend against the interest of labor and agriture, but rather in co-operation with these shall find a per solution of the problems which now vex the nation, nd constructively benefit them all. The interdependence of eir interests is so positive that antagonism should never HARRY A. WHEELER,

President Chamber of Commerce of the United States of

PROGRAM

(Subject to change at meeting of National Councillors, January 28.)

JOHN H. FAHEY, Chim of the

Executive Com. C.ofC.-U.S.A.

Address of welcome by Hon. Charles Nagel, Secretary

of Commerce and Labor, Address by Senator George E. Chamberlain of Oregon Address by Representative Henry D. Clayton of Ala-

Response to address of welcome, John H. Fahey,

chairman of Executive Committee. Minutes of organization meeting, Report of Board of Directors on rules for conduct

and procedure in annual meeting. Appointment of Committee on Credentials.

Appointment of Committee on Resolutions COND SESSION-Tuesday afternoon, January 21, at 2:30

Report of the Committee on Credentials.

Report of National Council on Program and Nominating Committee

M.B.TREZEVANT - President

American Association of Commercial Executives.

GEORGE E. CHAMBERLAIN

OREGON

Report of the Treasurer. Report of the Committee on By-Laws. HIRD SESSION-Tuesday evening, January 21, at 8:00.

dresses on the following subjects: (a) Banking and Currency Reform, Hon, Carter Glass of Virginia, chairman of Subcommittee of House Committee on Banking and Currency. Followed by resolution prepared by Committee

on Resolutions. (b) The Consular Service, Wilbur J. Carr. Director of the Consular Service.

Followed by resolution of Board of Directors (c) The Place of Commercial Organizations in National Development, E. A. Filene, vice president Inmerce, Boston; Frank W. Noxon, Railway Business Association: M. B. Trezevant, president American Association of Commercial Execu-

FOURTH SESSION-Wednesday morning, January 22 at 10 o'clock.

sideration of special subjects submitted by a constituent member, National Councillor or the Board of

(a) Permanent Tariff Commission. Association of New York, the Manufacturers Association of Beaver County, Pennsylvania the Oakland Board of Trade of Pittsburg, Pa., and the National Association of Tanners)

(b) Recognition of the Republic of China. (Submitted in resolutions of the Chamber of Commerce of Portland, Oreg., and the New Seattle Chamber of Commerce, Seattle, Wash.)

(c) The Pomerene Bill (S. 6810) and other pending legislation affecting bills of lading. (Submitted in resolutions of the Trade of the City of Chicago.

(Submitted by authority of the Board of Di

(e) The "Page Bill" (S. 3) introduced by Mr. Page. "A bill to co-operate with the States in encouraging instruction in agriculture, the trades and industries, and home economics in secondary schools; in maintaining instruction in these vocational subjects in State normal schools; in maintaining extension departments in State colleges of agriculture and mechani arts; and to appropriate money and regulat

FRANK W. NOXON,

RAILWAY BUSINESS ASSES.

(Submitted by authority of the Board of D

WEDNESDAY AFTERNOON, JANUARY 22. No session will be held, thus giving opportunity delegates, not engaged in committee work, to visit th Departments, which are open until 4:30, and to attend the White House reception. Special arrangements wi be made for delegates desiring to visit the Departmen of State, Consular Bureau; the Department of Commerce and Labor, Bureaus or Foreign and Domestic Commerce Standards, Census, and Fisheries.

WHITE HOUSE RECEPTION President and Mrs. Taft will receive the delegates t the first annual meeting of the Chamber of Commerce of the United States of America and the ladies ac panying them at the White House at 4 p. m.

BANQUET-Wednesday evening, January 22, at 8. Hon. William H. Taft, President of the United States,

Relation of business to Civil Service Reform. Dr. Charles W. Eliot, president-emeritus, Har vard, president National Civil Service Reform League.

Followed by resolution of Board of Directors Hon. Champ Clark, Steaker of the House. FIFTH SESSION-Thursday morning, January 23, at 10

1. Further consideration of special subjects noted unde fourth session. STYTH SESSION-Thursday afternoon, January 23, at 1

1. Report of the Committee on Resolutions. Report of the Nominating Committee. Election of Board of Directors,

ENTERTAINMENT FOR LADIES.

Tuesday afternoon-Automobile ride, Wednesday morning-Trip to Mount Vernon. Wednesday afternoon-Reception at White

Wednesday evening-Announcement later,

AN EDITORIAL VIEWPOINT.

This issue of The Nation's Business, appearing at the time of the first annual meeting of the Chamber of Commerce of the United States of America, is intended to give an impression of the year 1912 and of its relation to the rapid development of the country.

Blessings have been showered upon us; the generous lap of Nature has been filled in the fields; the riches of the mountains have been wrenched forth for our good; the waters have brought forth abundantly. The spirit of the people is turned toward better education. The problems that confront us by reason of such vast opportunities are merely touched upon. To adequately cover the Nation in all its interests would fill several times eight pages.

At a moment when it is natural that all good citizens should rejoice over that which has proved to be one of the greatest, if not the greatest, material year in our history, representatives of the commercial bodies of the United States are gathered in Washington to confer earnestly on our needs and to render more permanent that union of business forces whose history began during the year 1912.

The rapidity of our development, the variety and extent of our resources, and the very human tendency to overlook the essentials of permanent growth bring our men together to consider ways and means for making the use of our resources more efficient, for reducing waste, and for summing up the close relations which must exist between agriculture, industry, and commerce.

The social conscience of the land is stirred as never before with the realization that our mineral and agricultural and commercial resources are practically wasted unless hope and intelligent interest are concurrently imparted to the greatest single resource of all—the human being who gives to our country all the value that it has.

Therefore, in the spirit which is found in those thinking men who have become convinced that the full destiny of this country is to be wrought out along lines of sympathetic cooperation, this issue of The Nation's Business is placed in the hands of delegates to the first annual meeting. It is also offered to the editorial writers of the nation and to the commercial bodies scattered by thousands over our great area, whose activities will become better directed by a wider knowledge of the Nation's resources, needs, and problems.

Present Membership of the Chamber

Elected between April 22, 1912, and January 18, 1913.

262 Organizations Affiliated . . . 148,308 Membership in Organizations Number of National Councillors 262 901 **Delegates to Annual Meeting**

FARMING SCIENCE SPREADS IN EVERY COUNTRY SECTION

A Group of Statements From Many Agricultural Leaders As to the Greatest Advance During the Year of 1912.

have been shown by the Department of Agriculture of the Federal government

It means that the State has reached during the past twenty years that there is some danger that the activities by the States may be overlooked or underestigrowth and permanent prosperity must

rederal department has been similar development of State efforts, either independently maintained by State appropriations, or by adding to funds furnished by the Federal government under the Mortille Rederal department that the best equipped young men from the high best equipped young men from the high schools of the State can see in present-day agriculture, as it is taught in the development of the State can see in present-day agriculture, as it is taught in the development of the State can see in present-day agriculture, as it is taught in the development of the State can see in present-day agriculture, as it is taught in the development of the State can see in present-day agriculture, as it is taught in the day agriculture. rill and Hatch acts.

The finest of these State activities can be traced to the investigations of the experiment stations and agricultural and mechanical colleges. They seem to have become in recent years more keenly alive to the fact that investigation must lead The following brief notes from various

States show how vital is now the rela-tionship between the farmer and the stu-

County Extension Work.

I would say that, in our judgment, the county agricultural representative system in the several counties of the State is fraught with more consequence than any other single movement which has been considered during 1912.

This places a resident representative of for a single season, the county board was so enthusiastic in regard to the success of the work that they voluntarily appropriated a considerably larger sum of money for the work and care.

for the teaching of rural teachers, holding at the same time a poys' short course in winter. In this way we' are hoping districts in connection with their work.

This movement, as you, of course, know, s rapidly spreading throughout the nation, and seems destined to revolutionize our present methods of carrying on exnsion work. H. L. RUSSELL, Dean and Director of College of Agriculture, University of Wis-

Agricultural Surveys.

I cannot indicate any single line of agricultural discussion that is clearly and unmistakably more important than other lines for the year 1912; but, as I see it, the idea of agricultural and rural surveys is certainly as important as any other subject now before the rural people, seems to have gained particular headway in this State in 1912.

L. H. BAILEY, Director New York State College of Agriculture at Cornell Univer-

Sextupled in Decade.

The year 1912 has been marked by State-wide awakening in agriculture in Ohio. This is evidenced by the advance in price of farm real estate by the activ ity of the State and private agencies in promoting agriculture and by the enth siastic support given by farmers to every effort made to improve agriculture. This revival in agriculture is shown in

the increased attendance at the State Agricultural College at Columbus, in which the enrollment has reached nearly 1,500, and is six times as large as it was ten years ago, and this college, which formerly was one of the smallest in the Ohio State University, is now the largest. The agricultural fairs, corn shows, apple shows, live stock shows that have been held during 1912 all show the same lively interest in agriculture. The farmers' initutes, agricultural extension schools. held in the different counties and the eighborhood demonstrations, held by the different State agricultural institutions, have all been marked by large attendance of wide-awake, interested farmers

Ohio farmers are conservative, but they have begun to see the possibilities of their own farms, with a population of nearly 5,000,000 within the boundaries of the State affording an ample market for their products, with a soil equal to that of any of the other North Central States, and with transportation unsurpassed by any other State in the union, they are beginning to awake to their own

HOMER C. PRICE.
Dean College of Agriculture, Ohio

State University Legumes and Corn.

I consider the greatest agricultural advance made in this State during the year 1912 is the increased use of legumes in connection with corn growing. The State made last year 44,000,000 bushels of corn Ten years ago the yield was not more than 20,000,000 bushels of corn.

J. N. HARPER.

Director Department of Agricul-

ture, Clemson College, South

Carolina. A Great Appropriation.

I should say that the greatest single advance made in agriculture in Massa-chusetts during the year 1912 was the appropriation of \$50,000 a year by the Legislature for the purpose of short courses and extension teaching by the Massachu-setts Agricultural College, thus enabling the college to develop a comprehensive system of popular agricultural education throughout the commonwealth. KENYON L. BUTTERFIELD,

Massachusetts Agricul-

tural College. Farmers and Miners.

From my point of view, it seems to me that the most significant agricultural advancement made in the State of Nevada S for the year 1912 is the increase in the number of agricultural students in the University of Nevada to a number exceeding that in the mining school.

When we take into consideration that Nevada is primarily a mining State, and that the majority of people of the State Flaxseed.
Potatoes
Hay
Tobacco have so considered it, and that every effort has been made to strengthen the work of the mining school and to advertise it, while the school of agriculture has received a minimum of support and encouragement, the increase in the num-

Such stupendous growth and activity | ber of agricultural students becomes

rest upon the development of agriculture; it means that the brightest and

GORDON H. TRUE. Director College of Agriculture, University of Nevada.

Short-course Schools. The greatest agricultural advancement

nade in the State of South Dakota in of general interest in agricultural education, and the beginning of organized effort to establish agricultural field demonstration and short-course schools.
ROBERT L. SLAGLE,
President South Dakota State College.

Boys Excelling Fathers.

It is difficult to say what constitutes the greatest single advance made in Georgia's agriculture during the past year, but the fact that 2,500 Georgia boys produced more than 50 bushels of corn per acre on the university in the respective counties for the purpose of aiding the farmers in this way to improve their methods of agricultural practice. The results already crop year of 1911. Since these boys are crop year of 1911. Since these boys are required to submit a most exhaustive attained lead us to believe that this is required to report with their exhibit of ten ears, they methods of extension which we have methods of extension which we have probably learned more about the elementary principles of scientific agriculture.

appropriated a considerably larger such of money for the work, and said to me that the work which had been done in have shown the possibilities of Georgia the that the work which had been done in this respect was of incalculable benefit. In organizing this work, the county contributes one-half of the salary and expenses, the university furnishing the balance. While the work of the representative in the summer is to advise and balance. While the work of the repre-balance. While the work of the repre-balance. While the work of the repre-ceded them. Their example has been in-ceded them. Their example has been in-fectious, and they have illustrated the power of the trained intellect over materepresentative gives the agricultural rial things more forcefully than has ever teaching in the county training school been accomplished before. They have shown how the capitalization of a few to affect immediately the character of the teaching in our rural schools of the school go immediately into the country within the reach of every Georgia farmer listricts in connection with their work. tice permanent prosperity may be brought appreciation is shown by the fact that nearly a thousand corn club boys, pa-rading the streets of Georgia's capital city and carrying stalks of corn, were greeted with continuous approbation along he line of march. It is a long step from ndifference to approval, from jeers to heers, and from patronage to honor.

ANDREW M. SOULE,
President State College of Agri-

culture, University of Georgia. Reorganization of Courses.

After carefully considering the matter and consulting with the various repre-sentatives of our college and station, we other subject now before the rural people, and this idea seems to have gained widespread attention this year through the announcements of political programmes as well as otherwise. The recognition of the importance of this line of work is. I think, one of the most significant advances of the year. Such surveys have been in actual process here and there, and piece by piece, but the general understanding of the importance of such investigation to the welfare of the State college course with a view to prewide extension service, bringing into co-operation the State, national government, and other agencies: (5) the organization erent counties and districts, taking part n the work; (6) and the practical agree nent on a plan for future development Briefly, I might express it in the phrase The organization of agricultural and ex ension education for the State of Min-A. F. WOODS.

Dean and Director Department of Agriculture, University of Min-

Constitutional Amendment.

In my opinion, the greatest good that as been done for the agricultural intersts of Louisiana during the current year s the adoption at the last general elec-tion of the constitutional amendmen exempting from taxation for twenty ears corporations organized for the sole urpose of lending money on country real estate situated in Louisiana at no more with power to negotiate and handle local

Records of corn clubs up to date rereived by the Extension Department of the Louisiana State University for 1912 make the following fine showing for Average yield, by government methods,

ushels per acre.

The average profit per acre made by he boys this year was \$36.30. THOMAS D. BOYD. President Louisiana State Univer-

ew methods was 39 cents.

its welfare is of at least equal importance, and probably of more importance to the general prosperity of the State than manufactures and mining. Business or-ganizations, such as the State Bankers' Association and State Board of Trade, are taking an active interest in this mat-er, and numerous local Boards of Trade nd Chambers of Commerce are interestng themselves in local agricultural de velopment, and particularly in the mat ter of employing county agricultural ex-perts. Although this may not be considered an actual advance in the agricul ture of the State, this general awaken ing to the importance of agricultural de velopment is the most significant move-ment in connection with agriculture of the year, and is fraught with greater consequences than would be the increase in any particular crop.

In crop production, the greatest ad-

ance has probably been in the yield of The report of the Bureau of Staorn. tistics of November 1, 1912, shows an average yield per acre of corn of 33.8 oushels, as against 27.7 for the previous ten years. The quality is rated at 92, as against 85 for the previous ten years. The total production is estimated at 24, 0,000 bushels, as against 18,170,000 bushels for 1911. Although the past season has been the most favorable for corn production in a great many years, never theless this is a remarkable increase, and the largest yield per acre which has een secured in any year up to 1912. This is partly due to the season, but to a large extent it is due to the better selection of seed and better culture and the grow ing influence of the boys' corn clubs.
Potatoes, hay and other crops have also

year, due to the favorable season,
E. D. SANDERSON,
Director College of Agriculture,
West Virginia University.

Farmers' Mutual Benefit.

I will say that the greatest advance ter organization and more harmoniou o-operation than we have ever had be The farming interests of the State realize the importance of getting together and of working for mutual benefit.

There has been considerable advance also, in the matter of agricultural edu

cation in the secondary schools. This advance is not as rapid as the people would like to have it, because of the difficulty in securing properly trained s. ROBERT J. ALEY, President University of Maine.

Oregon's Great Output.

Dr. James Withycombe, director of th Oregon Experimental Station, estimates the value of Oregon's soil products, &c., for 1912 at \$126,764,049. In detail, this esti-

	mate follows:	
		Value.
9	Wheat, 21,092,274 bushels	\$15,819,205
•	Oats, 14,744.046 bushels	5,602,737
-	Barley, 4,439,374 bushels	2,663,624
3	Clover seed, 125,000 bushels	1,050,000
	Potatoes, 8,751,685 bushels	3,500,674
	Hay, 1,374,201 tons	12,367,809
9	Fruit	
1	Vegetables	
	Hops, 85,000 bales	
1	Miscellaneous products	
l	Dairy products	
	Wool, 17,500,000 pounds	2,850,000
t	Mohair, 1,250,000 pounds	
	Honey	135,000
1	Live stock	33,150,000
	Total	\$126,764,049

Boys and Girls Working.

The greatest advance made in agricul the organization of 11,000 boys in the corn clubs and 3,000 girls in canning clubs, planted the work of the college extension depart-ment, and of farm demonstration.

CHARLES C. THACH, President Alabama Polytechnic In-

A Resident Specialist.

Early in the year the farmers of our experiment station.

any company would employ a specialist or a consulting lawyer. The men to be benefited are paying the bills themselves. There is no element of patronage about it but it is strictly a business proposition.

ew months upon the ground, he has a very lively interest in the growing of nade a deep impression upon the agri-cultural people of the county, showing larly the clovers, alfalfa, and the garthat the effect of the movement is certain to be far-reaching and profound.

This I regard as the cleanest and most rogressive step along agricultural lines during the past year.

E. DAVENPORT. Dean and Director Agricultural Experiment Station, University of

A Modern Market.

irse you know that the State of the strong and rapidly growing sentimen-Rhode Island is not largely an agri-cultural State, and, consequently, it is not probable that any startling advance the consolidation of the rural schools, would be made during the year 1912. The most important movement that I know is the effort now being made to establish a proper and suitable modern market in the city of Providence for the market gardeners of the State. This movement has large and influential incredit that will stimulate ownership and terests behind it, and, although it is still improvement of farm lands, and pride 1.32 bushels per acre.

Average yield, old-time methods, 20.24 there can be but one outcome, i. e., the final establishment of suitable quarters. in the doubtful stage, it seems to HOWARD EDWARDS.

President Rhode Island State College. Irrigation and Dry Farming.

Probably the greatest advancement in irrigation farming has come through the development of pumping projects in cer-tain localities which have abundant water The Basic Industry.

In my judgment, the greatest advance in agriculture in West Virginia during the past year has been the very general awakening on the part of business men and publicists to the fact that agriculture is one of our hoste industries and the past year has been the very general awakening on the part of business men and publicists to the fact that agriculture is one of our hoste industries and the water. With regard to those irrigion of our hoste irrigions of our hoste irrigions are four which the water. is one of our basic industries, and that gation projects which call for construc

STATISTICAL STORY OF 1912.

(From Bradstreet's.) AGRICULTURAL YIELDS.

orn, bushels. Vinter wheat, bushels. Oring wheat, bushels. Otal wheat, bushels. ats, bushels. arley, bushels.	399,919,000 330,348,000 730,267,000	Change from 1911. Inc. 23. Dec. 7. Inc. 73. Inc. 17. Inc. 53. Inc. 39.
ye, bushelsuckwheat, bushels	35,664,000 19,249,000	Inc 7. Inc 9.
Total six cereals. laxseed, bushels. otatoes, bushels. ay, tons. obacco, pounds. ice, bushels. otton, commercial crop, bales. ugar, beet and cane, tons. AGRICULTURAL VALUE:	28,073,000 420,647,000 72,691,000 962,855,000 25,054,000 14,500,000 1,835,000	Inc. 29. Inc. 44. Inc. 43. Inc. 32. Inc. 6. Inc. 9. Dec. 10. Dec. 2.
orn	323,572,000 231,708,000 555,280,000 452,469,000	Change from 1911. Dec. 2. Dec. 14. Inc. 41. Inc. 9.

Buckwheat

Total six cereals.....\$2,677,516,000

SECRETARY OF AGRICULTURE, JAMES WILSON. tion of large dams, or great canals, and Utah, probably is the most notable consequently for large expenditure of outside capital, I believe there has been during 1912. JOHN A. WIDTSOE

side capital, I believe there has been not only in New Mexico but throughout the West a decided quickening of the conscience. I think I can see a greater inclination on the part of the promoters of such enterprises to be sure of the merit of the project before inviting capital to take hold of it. This. of course, is a matter of good business medium of our own men, who buy for us \$4,000,000. sense as well as business ethics. and who must know where the rice is. Cotto

The dry farming districts have been facing the problem of farm management as well as the problem of crop producduring the past year have been along the former lines. The dry farmers are being convinced of the profitableness of feeding their productions on the farm, and marketing meat or dairy products as follows:

4-bushel rather than grain. There has been a decided increase in dairying.

W. E. GARRISON,

President New Mexico College of Ag-riculture and Mechanic Arts.

Growing Apples and Seeds. During the year this State planted ure in our State during the year 1912 was about 50,000 acres of orchards of kinds, particularly apples, planted about 50,000 acres of orchards of various kinds, particularly apples, and I am not sure that this is the greatest advance, since much of this land is not particularly well adapted for orcharding, and we are anticipating some-thing of a setback in this business. Another great advance that has been made has been along the line of dairying. Early in the year the farmers of has been along the line of darrying. DeKalb County arranged a fund of \$10,000 a year with which to employ and pay the expenses of a resident specialist in agriculture. They employed for the purpose one of the leading younger men purpose one of the leading younger men to any experiment station. n our experiment station.

The incident is unique in that the improvement of the greatest returns for the future, I think, in this State. In addifarmers themselves, with no outside stimulus, guidance, or assistance. They employed this officer exactly the same as turned to this State through the growth it, but it is strictly a business proposition from first to last.

or life State there has seed. A contract has already been let for next year Although the specialist has been but a for upward of 13,000 acres. There is also

in rural homes and rural institutions.

Marked advance has been made in seed selection and crop improvement, in

cultivation and rotation. Greater efforts

the farms of the State with a better

Using Less Water.

In all probability, however, the great-

culture during the year 1912 is the more

thorough appreciation of the fact that

profitable, and in many cases maximum

yields of crops, may be obtained with the

use of very much less irrigation water

than has ordinarily been used in this and the surrounding States in the past.

In Utah the rainfall is low and crops

Inc.... 1.4 into practice among the farmers

E. J. WICKSON.

vestments.

sity of California.

Number of active members in the Cotton Club-Number reporting—62. Number of complete reports—57. Number of incomplete reports—55. Total number of pounds, as per reports—68,332. Average yield per acre—1.197.9 pounds. Average profit per acre—\$23.39. Average profit per acre—\$28.39. CANNING CLUB Number of active Number of active members in Canning Club—36 Number reporting—189.

Number of complete reports—142.

Number of incomplete reports—47.

Average value of products on 1-10 acre—\$20.44.

Average cost per 1-10 acre—\$8.01.

Average profit on 1-10 acre—\$12.08. cipal lines of advance that have been made in this State agriculturally during te past year. W. L. CARLYLE.,

Director College of Agriculture, Uni-F. ADAMS versity of Idaho. Dean College of Agriculture, University of Arkansas. Silos on Iowa Farms. Of marked significance, and tending

MEAT FIGURES FOR 1912. strongly toward a better agriculture, is

A synopsis of the official reports made ricultural training in the public schools, to the National Provisioner follows: Rethe consolidation of the rural schools, ceipts of meat animals at eight centers for the year, with totals compared to the improvement of social and religious 1911, were reported as follows life in rural communities, the development of a system of permanent road building in the State, and the interest

President Agricultural College of Utah.

Rice Crop Short.

We operate extensively in the States

what the yield is per acre, and other

3,168,843

FRANK A. GODCHAUX, New Orleans, La.

Work of Children.

I am inclosing a brief history of the Boys and Girls' Club work, which I con-

sider the greatest single advance made in agriculture in this State during the Total number enrolled during the year-2.850. CORN CLUB. Number of active members in the Corn Club-1,002.

nplete reports-89.

Total number of bushels, as per reports—13,598.

Average yield per acre—49½ bushels.

Average ost per bushel—50c.

Average profit per acre—\$24.75.

COTTON CLUB.

Number of active members in the Cotton Club-213.

members in Canning Club-364

conditions surrounding the crop, in or-

Less "seed" for 1913 crop bags... in addition there will be used by brewers from domestic crop for

brewing purposes the equivalent

Leaving net bags for the gro-cery trade of the United States

of bags rough...

	Cattle.	Calves.	Hogs.	Sheep.
Chicago	2,652,342	505,401	7,180,967	€,055,546
Kansas City.	1.943,390	203,834	2,523,331	2,133,976
Omaha St. Louis	1,017,195		2,886,244 2,529,897	2,950,507 1,630,609
St. Joseph	450,935	43,487	1,969,933	728,852
Sioux City	404.672	26,096	1,697,788	206,517
St. Paul	393,059	130,708	983,665	627,973
Fort Worth	778,951	263,958	387,579	283,914
Total, 1912	8,840,445	1,173,484	20,159,404	14,017,894
Total, 1911	9,319,949	1,107,889	20,482,748	13,708,027
Slaughter	s of n	neat an	imals a	t eight

have been put forth more fully to stock type of domestic animals, thus insuring a better balanced and more permanent totals compared with 1911:

I should say the greatest advance in	EVDECTE	DEC	TIME		
California Recognized.	Total, 1912 Total, 1911	5,203,610 5,490,811	987,011 959,118	16,450,445 17,074,534	10,101,518 9,226,168
factor in this advance. The silo will nearly double the stock carrying capac- ity of the average Iowa farm and in- sure a system that will contribute to conservation and restoration of soil fer- tility. C. F. CURTISS, Dean Iowa State College.	Kansas City. Omaha St. Louis St. Joseph	1,060,262 577,138 883,497 297,877 154,293 123,118 426,289	33,966 24,334 107,442 185,920	2,423,742 2,479,370 1,850,984 1,802,601 1,175,496 755,532 354,405	1,611,651 1,572,177 933,924 561,069 171,516 197,340 172,948
a better balanced and more permanent agriculture. The rapid extension of the use of the silo has been an important	totals com	Cattle.	Vith 191 Calves. 462,932	Hogs. 5,608,315	Sheep. 4,880,873

1912 consisted in the increased recog- EXPECTED DECLINE nition of the value of good California IN COTTON CROP farming lands for their producing ca-

pacity and for their desirability as in-The following shows the government's crop estimate compared with the Census Dean, College of Agriculture, Univer-Bureau's total ginning figures, including linters and the total commercial crop on the movement marketed for the year including linters: est single advance made in Utah agri-

> .12,820,000 16,109,000 .13,885,000 16,138,00 .11,426,000 11,966,000 13.432.000 ..11,678,900 11,326,000 ..12,546,000 13,305,000 ..10,168,000 10,728,000

Bales.

Bales.

World's Cotton Crops.

must be grown, therefore, by dry farming or by irrigation. Dry farming is a The following shows the world's last system of agriculture which, by special tillage methods, conserves the small rainfall in the soil so that it can be used by the plants during the growing. used by the plants during the growing season. We are now understanding, as never before, that the amount of water

	into practice among the farmers of	Total2,297,000	18,711,000	16,777,0
	land. This thought, which is crystalizing		190,000	199,0
	cover properly a much larger area of	Other countries 210,000	195,000	195.0
			92,000	90,0
	mitting a given quantity of water to	Mexico 100,000	135,000	125,0
	may be reclaimed by irrigation by per-			
		m 4 304 000	105,000	32.0
	increasing very largely the area that	Peru 128,000	128,000	107.0
1	The understanding of this principle is	Brazil 320,000	310,000	. 360,0
1	mentary to the natural precipitation.	China 625,000	775,000	600,0
ļ		Articolar Transfer and Articolar	900,000	720,0
1	That is, irrigation is simply supple-	E-831/6 1,100,000	1,506,000	911,0
1	fall is more carefully stored in the soil.			
ı	smaller and smaller as the natural rain-	British India 2 814 000	3,082,000	3,774:0
			11,483,000	9,863.0
į	used on the irrigated lands becomes	1911,	1910.	1909.
	never beroie, that the amount of water			

SECRETARY WILSON HAS HAD **RECORD SERVICE IN CABINET**

Head of Agricultural Department Proud of Development of That Branch Under His Administration-Has Had Long Public Life.

On March 4 James Wilson will have served as Secretary of Agriculture for sixteen years. His annual report to the President contains a comprehensi retrospect of his administration, and shows that the department has so devel oped during that time that the appropriations have increased from approximate \$1,000,000, exclusive of agricultural college funds, to upward of \$22,000,000, from hardly more than a subordinate bureau to a great department of the govern ment, with world-wide ramifications.

In speaking of his work, Mr. Wilson expressed his enthusiasm in the great work done during his administration along several important lines; among them the combat with the boll weevil, which has done so much damage to the cotton crop. The campaign in this direction led to instructing the Souther farmer how to make the most of his farm, with the result that the South is longer a one-crop country. Later came the work of eradicating the fever and in this work the department has cleaned up 164,000 square miles. M Wilson was particularly enthusiastic concerning the work of Dr. Knapp in or ganizing boys and interesting them in farming, and then organizing the girl for the purpose of teaching them better ways of keeping a home clean and comfortable and attractive, and to teach them to can fruit for winter use In his report to the President, the Secretary of this wonderfully effective

department shows that 1912 has been the most productive of all years. We quote from his report as follows: The total crop value is so far above that of 1911 and of any preceding year

that the total production of farm wealth is the highest yet reached by half a bil tion dollars. Based on the census items of wealth production on farms, 1) grand total for 1912 is estimated to be \$9,532,000,000. During the last sixteen years the farmer has steadily increased his weal

roduction year by year, with the exception of 1911, when the value decline rom that of the preceding year. If the wealth produced on farms in 1899 be garded as 100, the wealth produced sixteen years ago, or in 1897, is represen by 84, and the wealth produced in 1912 by 202.1. During the sixteen years the farmers' wealth production increased 141 per cent.

The wealth production on farms during the last sixteen years reached that grand total of more than \$105,000,000,000. This stream of wealth has poured out of the farmers' horn of plenty, and in sixteen years has equaled about three quarters of the present national wealth.

Foreign Trade in Farm Products.

Over a billion dollars is for the fourth time the value of the exports farm products. They are sufficient to pay the expenses of the National gov ernment. The billion-dollar mark was first reached in 1907, when the value of the agricultural exports amounted to \$1,054,000.000. That amount has he of Louisiana, Texas and Arkansas, and since been equaled, but the exports of 1908 and 1911 exceeded a billion dollars our statistics are gathered through the in value, and in 1912 the amount fell short of the record exports by or

Cotton is the great mainstay of the export trade and marked increase exports is conspicuous. Apples are supporting an increased export trade, while now amounts to about \$10,000,000, both dried and fresh apples being included tion. Perhaps the greatest advances der that we may buy intelligently with Prunes are a fruit that has reversed the tide of international trade, and raising re in the same class.

To the list of commodities whose exports are increasing and are above average of ten years, 1900 to 1909, or very close to that average, may be add glucose and grape sugar, hops, corn-oil cake, cottonseed-oil cake and oil-cake meal, flaxseed oil cake and oil cake meal, cottonseed oil, linseed oil, rice, cot seed, tobacco, and the four vegetables-beans, peas, onlons, and potatoes.

Exports of Beef Fall.

Beef and its products have gone into a sorry decline in the export trade but wheat flour still maintains a high relative showing, as is indicated by 71 in comparison with 100 standing for the annual average of the ten years, 1909 to 1909, and has steadily increased in exports during the last three years.

Packing-house products have declined in value of exports since 1906, when they reached the high value of \$208,000,000. and have declined still more so in quantity because of the increasing prices; but the value of packing-house exports has increased since 1910, and reached the amount of \$164,000,000 in 1912. Although the exports of grain and grain products are now below the maximum amounts of the values of some years ago, the value of these exports in 1912 was \$123,000,000.

The balance of trade in favor of exports of farm products was \$278,000,000 in 1912. The favorable balance has been declining since 1908 for the reason that the imports have increased faster than exports.

The various forest products exported in 1912 were valued at \$108,000,000 and the imports at \$173,000,000.

4.781,464

The work of the department in aid of farmers' institutes has continued under the direction of the Office of Experiment Stations. Reports received from the several States show that 5,663 regular institutes were held in forty-States. The total number of sessions was 15,965 with a total attendance of 2,272,146. It estimated that complete reports from all States would show over 19,000 session of regular institutes with a total attendance of over 2,500,000. The reports hand show that the special institutes aggregated an attendance of 1,389,25 making the entire attendance at institute meetings of all kinds nearly 4,000,00 an increase of over 360,000 over the figures for last year.

Progress of the Soil Survey.

The work of the Bureau of Soils has been vigorously prosecuted during the last year. The soil survey work has been carried on in eighty areas, distributed through twenty-eight States.

There have been surveyed during the year 31,304 square miles, or 20.034,560 acres, on the detail scale of one mile to the inch, and 149,810 square miles, or 95,878,400 acres, on the reconnoissance scale of four miles to the inch. The reconnoissance work has been mainly in the Great Plains region.

More and more active interest is being taken in the soil survey, and a number of States, in addition to those which were reported last year, have started active co-operation work with the bureau, in order that the progress of the survey within their borders may be hastened for the benefit of their people.

The Agricultural Colleges and Schools.

The Agricultural Colleges and Schools.

The faith of the people of the United States in agricultural education is be coming each year more apparent in the better support given to the agricultura colleges, in the establishment of additional agricultural courses in universitie and colleges of private foundation, in the increasing number of States giving financial aid to secondary instruction in agriculture, in the attention given to the training of teachers of agriculture for secondary and elementary schools in the large attendance of students at all sorts of colleges and schools in which agriculture is well taught, and in the great popularity of certain forms of elementary instruction in agriculture, such as children's gardens in cities, boys corn clubs, girls' garden and canning clubs, and other juvenile agricultural cities work.

work.

According to a list published April 30 by the Office of Experiment Station and compared with a similar list published in May, 1910, the number of land trant colleges giving instruction in agriculture has increased from 57 to 6 and the number of privately endowed colleges from 24 to 42. Columbia University has established short courses and extension work in agriculture, an syracuse University has added colleges of agriculture and forestry. Practically 10 to 10 the State colleges for women in the South now maintain courses in agriculture, glying attention particularly to gardening, floriculture, and poultry has ilture, giving attention particularly to gardening, floriculture, and poultry hus

Agriculture in Secondary Schools.

Agriculture in Secondary Schools.

Among secondary schools there are now 78 special agricultural schools, as compared with 58 in 1910, and 289 public high schools receiving State aid for courses in agriculture, whereas in 1910 there were 28. Minnesota alone is giving \$125,000 a year to stimulate the introduction of agriculture, home economics, and farm mechanics into public high schools, 30 of these schools receiving \$2,500 a year each and 50 schools receiving \$1,000 each. Kansas, Louisiana, Maine, Maryland, Massachusetts, New York, North Carolina, Virginia, Texas, and Wisconsin are the other States that appropriate funds for this purpose.

Of public high schools teaching agriculture without State aid the number has increased from 432 in 1910 to over 1,600 in 1912, and of State and county normal schools which are giving their students some instruction in agriculture the number has increased from 156 to 196.

These are all institutions for white students. In addition, there are over 100 secondary schools for negroes, 16 special elementary schools for negroes, and 112 schools for Indians, all of which are giving some instruction in agriculture.

The total number of institutions listed in 1910 as having students in agric ture was 863, while at the present time there are 2,575, an increase of 1,712 institutions, or nearly 200 per cent, in two years.

RAPID PECAN DEVELOPMENT.

Large increase in the orchard area, a growing demand for the best trees for planting, a lively interest in the pecan as an investment, and a great increase in the number of inquiries for information about nut culture, particularly the pecan in the South, are prominent features of the industry for the year 1912. All of these features are receiving increased attention from widely separated sections, both North and West, while the Central and New England States furnish a full quota. Following the National Nut Growers' Convention at Mobile Ala., late in 1911, the planting season opened early and the supply of available trees was exhausted long before the planting period was passed. The bulk of this planting was in South Georgia, Lower Alabama, and West Florida, Statistics gathered from the leading nut nurserymen showed sales of over half a million trees, and as the present custom allows but twenty trees to the acre, it is readily seen that fully 25,000 acres of new orchards were set during the season, as the trees sold by smaller nurseries, and not included in the statictics gathered, would doubtless provide for replants and the general domestic planting not classified with commercial orchards. Each acre set to pecans is considered worth \$100, therefore it is evident that two and a half million dollars were added to the permanent property value of this territory. There is reason to believe that the past season's additions to the orchard area will bring the present total up to approximately 100,000 acres. This includes simply the commercial orchards, practically all of which have been planted during the past eight years.

An interesting development in the general situation is the steady advance in the price in the common seedling pecans which has taken place since the improved varieties came into notice. The Texas crop, which was bought up by local merchants at prices ranging from five to eight cents a pound ten years ago, is now in demand at fully double those figures. During this same period the importations of nuts have regularly and rapidly increased. Although the California production of walnuts has doubled during the past ten years, the importations for the same period have trebled. All this shows such an increasing demand for nuts that it seems improbable that any over-production can possibly occur within the next twenty-five years, if ever, because the actual food value of nuts is now being generally recognized.

Editor The Nut Grower, Wayeress, Ga,

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leveloped chinery is human la hushel of

of corn. from four had given self-binder stalks and removing husks, sta the power gine; beca of corn P

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Agricul

THE HA

FARM MACHINERY

Interesting Sidelights by Famous Manufacturer on To-day's Farm Results.

METHODS FIRM AND FIXED

Man important of the improvement agricultural processes are those de ding on agricultural machinery, its plication, its improvement, the skill colored in its use.

nereased productivity of human as let the use of implements and ma many is strikingly stated in the case M From 1855 to 1894 the time of July. labor required to produce one of corn on an average declined four hours and 34 minutes to fortylnutes. This was because inventors given to the farmers of 1894 the gang , the disc harrow, the corn planter n by horses, and the four-section w for pulverizing the topsoil; bethey had given to the farmer the inder drawn by horses to cut the and bind them; a machine for ing the husks from the ears and the same operation for cutting the ks, stalks, and blades for feeding, power being supplied by a steam enbecause they had given to the a marvelous corn sheller, oper-steam and shelling one bushel per minute instead of the old was required for 100 minutes same work.

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improvements go no farther 1870, and that date may b even more appropriately inery, since, as a recognized assures us, "a really scientific unknown before 1870." By Au-the United States Patent Ofgranted 13,212 patents for har-machines, 13,171 for plows, 2,649

wheat, and in five minutes puts ow, large farms in the West ning and sacking, can each proceed, are told, at the rate of a hundred as a day. To produce a bushel of wheat rage three hours and three minman's labor, costing 17 3-4 cents; of Agriculture, who ascribed Canada in 1912 amounted to \$225,320,900 as compared with \$234,337,250 in 1911 and as compared by drawing bushes over \$234,470,650 in 1910. The losses by months cut by sickles, hauled to a barn, for the three years are given as follows time before spring thrashed by the "Industrial World" s; and winnowed with a sheet eater than in wages, proportionally, he human labor employed, which ss than 6 cents an hour at the

Agriculture Firm and Fixed.

ased use of "labor-saving" machinery

er date, but 20 cents an hour at the September.
This illustrates the accompani- November

already often remarked, of in- December

mparing any single year, chosen at TICK ERADICATION WORK dom, with the year just before or just seems more uncertain all growth and yield so incalculable as weather? The ticks that infest the South and spread t-laid plans may be wrecked by sud-storms or steady droughts, or by anticipated onslaughts of disease, trating live stock or growing plant, tion between the Federal and State auwhen a comparison covers groups of ticks and released from quarantine up to date amounts to 164,896 square miles, as if that gave place to sys- which is equal to more than the comand every element of caprice disred. In that view agriculture looks and fixed, as a structure founded on Mississippi. While only 2,675 square or it shows as beautiful a for- miles of this area were released during march as is to be found in human 1912, this does not show by any means Agriculture may still be stagd very slowly everywhere, but it is have had men actively at work in the bly progressive he A. B. FARQUHAR.

HE HARDWOOD SITUATION.

were dragging, and the hardaccumulated; and while the grades piled up in what was an appalling magnitude. In 1912 hardwood lumber her in first hands or in dwood commenced to figure the utilization of belief that they could be arse end of hardwood went dium low grades have extent taken the place

g of 1913 hardwood stocks country over, and in lines there is an absolute a good many other woods are the same situation.-Hardwood

OUR MONTHLY FOREIGN TRADE. Record of 1912's Oversea Commerce

of the United States. The government's returns of merchandise exports and imports of the United States in 1912 made the following contrast with 1911 and 1910, the returns of December this year being estimated:

		EXPO	RTS	
		1912.	1911.	2010
	January	\$202,586,074		1910.
	February	198,875,428	\$197,083,391	\$144,461,435
	March	205,332,928	125,957,305	124,558,030
	April	179,068,714	161,933,204	143,657,857
	May		157,987,550	133,110,253
	June	175,895,328	153,153,353	131,083,890
)	July	138,133,421	141,706,737	127,887,780
	August	147,260,905	127,696,954	114,627,492
	September	167,885,095	144,185,193	134,666,378
	October	199,701,652	195,798,647	168,873,643
	November	254,696,985	210,365,516	207,709,086
S	November	277,898,681	201,752,760	206,620,377
-	December	275,000,000	224,753,431	229,002,683
S	Total	\$2,423,563,324	\$2,092,373,141	\$1,866,258,904
11		IMPOI	RTS.	
		1912.	1911.	1910.
	January	\$143,557,721	\$130,561,234	\$133,670,278
n	February	134,217,910	121,694,740	130,117,980
	March	156,625,083	139,041,928	162,999,435
	April	162,724,659	119,826,706	133,921,911
e	May	155,600,724	129,814,160	118,837,907
	June	131,192,037	122,807,184	119,876,487
£	July	148,533,903	118,054,204	117,315,591
0	August	155,020,792	125,945,385	138,358,307
	September	144,862,343	125,171,644	117,264,513
d	October	177,995,830	132,605,751	124.046.331

Total...... \$1,824,309,560 \$1,532,931,861 \$1,562,904,151 During a series of calendar years this

1			Exces
	Exports.	Imports.	export
1912	\$2,423,563,324	\$1,824,309,560	\$599.253
1911		1,532,931,861	559,441
1910	1,866,258,904	1,562,904,151	303,354
1909	1,728,198,645	1,475,520,724	252,677
1908	1,752,835,447	1.116,374,087	636.461
1907	1,923,426,205	1,423,169,820	500,256
1906	1,798,243,434	1,320,501,572	477,741
1905		1.179,144,550	447.846
1904		1.635,909,190	415,409
1903	1,484,753,083	995, 494, 327	489,258
1902	1,360,685,933	909,316,870	391,363
1901	1,465,375,860	880,419,910	584.935
1900	1,477,916,118	829,149,714	648,796
1899		798,967,410	476,500
1898	1,255,546,366	634,904,448	620,581
1897		712,595,239	357,113
1896	1.005,837,241	681,579,556	324,257
1895	. 824,800,136	801,669,347	23,190
1890	857,502,548	823, 397, 726	34,104
1885	688,249,798	587,868,673	100,381
1880	889,683,422	696,807,176	192,876
1875	519,947,122	503, 162, 936	7,784
1870	. 403,586,010	461,122,058	*57,546

*Excess of imports.

MAP SHOWING PROGRESS MADE BY THE BIRDMEN.

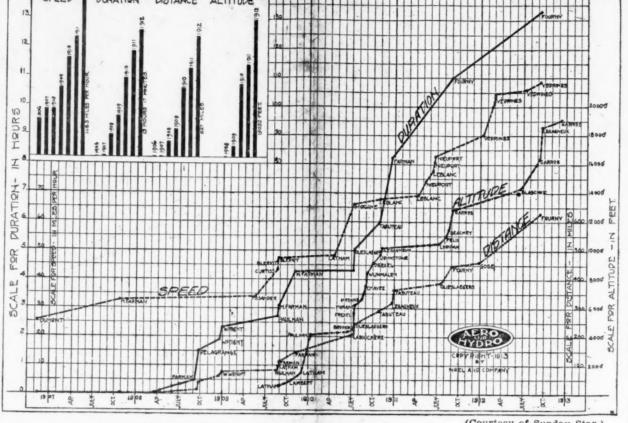


chart that has been compiled by the aviation magazine, "Aero and Hydro," of Chicago. From 1906 to 1908 there forty miles an hour, which was about as slow as they and simple, it having no practical utility. 816 could go to keep in the air at all. The "mile-a-minute" machine was supposed to be a near possibility at the end of 1909, and the record at the close of this year was 108.5 miles an hour. There was practically no attempt to establish an altitude record prior to 1910, aeroplanes previous to that having hovered under 200 feet.

Then Louis Paulhan astonished the world by going over 4,000 feet. Since that time the customary altitude for | and the aggregate now is nearly 2,500.

How the principal records in aviation have advanced | cross-country flying has been 2,500 to 3,000 feet, and this rom 1908 up to the present is shown in the above special has been generally accepted also as a safe minimum for military aviation. Since that time the record has risen to was little change in the speed, aeroplanes flying at about more than 19,000 feet, but this height is a freak record, pure

The duration record, which indicates a practical advance in flying machine construction, remained under the hour until late in 1908, and since then has advanced to culture has called attention to this fact, 13 hours and 17 minutes. The record for distance has also and in his estimates of appropriations gone to 627 miles, and at its present rate of increase prom- has included an item for an additional ises to be 850 miles before the end of the present year. There were but twenty-six licensed pilots flying in 1909, and the aggregate now is nearly 2.500.

The maintenance of patrois and the establishment of lookout stations are California.

NEW TEXTILE MILLS.

the 23 for 1912, there are six small plants with worsted and woolen spinning machine, the automatic hay or achine, the automatic hay or a dispensing with the man at the are instances of progress last year. Now we have on Slope a machine that in one cuts, thrashers, cleans, and wheat, and in five minutes puts

COMPARISON OF NEW MILL CONSTRUCTION FOR LAST TEN YEARS

SHOW A DECREASE

12,662,650

11,333,250 13,945,000

21,528,000 22,722,850 17,967,0

ALL OVER THE SOUTH

Total for year. \$234,470,660 \$234,337,250 \$225,320,900

GOING ON WITH SUCCESS

the work done during this year. We

various affected States and the results

of much of this work will not be appar

ent until next year or even later. The

keted without quarantine restrictions

13,651,60

Fire losses in the United States and

plowed, harrowed and sowed with at in one operation, by a traction wooden 37 32 67 80 47 64 74 33 48 81 Wooden 24 20 31 47 23 25 56 38 45 65 processes, first, the plowing and lng; second, the cutting, thrashing, and sacking, can each proceed, in any second, the cutting, thrashing, and sacking, can each proceed.

sumption is now being machine made, and it is noticeable that the most progressive hand manufacturers are making an earnest effort to secure a dependable machine equipment. Demand in all lines

The number of cars ordered, classified according to the service in which they are used, is given below:

1908, 1909, 1910, 1911, 1912, 1914, 1915, 1916, 1917, 1918, 1919, 1 has been up to the average of former years, and the year 1913 bids fair to be a more profitable one for manufacturers generally than any that has preceded it Totals...... 265 208 274 289 222 262 303 245 290 334 Budget."

GLASS TRADE USES

ELECTRIC CARS OF 1912.

NEW LEXILE MILLS.

NEW LEXILE MILLS.

INCREASING MACHINERY

Generally speaking, the past year has not been a bad one for glass manufacturing searching freedom from depression or an equally undestired by reason of overproductions of the last few may not the gasoline engine of the southern total, and 55 per cent of the following food, churning butter, saw-old, shelling corp. All formers planned or borsepower. On smaller fill good, shelling corp. All formers planned or borsepower. On smaller fill good, churning butter, saw-old, shelling corp. All formers planned or borsepower. On smaller fill good, shelling corp. All formers planned or borsepower. On smaller fill good, shelling corp. All formers planned or borsepower. On smaller fill good, shelling corp. All formers planned or borsepower. On smaller fill good, shelling corp. All formers planned or borsepower. On smaller fill good, shelling corp. All formers planned or borsepower. On smaller fill gabor, much work is spared in the early owned to the corp being planned with an annual average of 35 for the preceding sight years. Among the gain glow and the double-row planter. The ed steering guides on the tractor smallenging branche, be automatic hay or large the same proportion of the planned or borsepower. On smaller fill granted the gain glow and the double-row or three row planter. The work is spared in the early owned to the corp being guides on the tractor smallenging branch, pennsylvania has just one-half of the 112 new mills.

NEW I EXILIE MILLS.

INCREASING MACHINERY

Generally speaking, the past year has not been a bad one for glass manufacturing sent how on the united States and bode one of glass manufacturing sent by early of cars of all kinds ordered was 6,001, N. The cotton industry the south is far in the lends the various branches of the industry and a gratifying freedom from deposition or an equally undestired by reason of overproductions, while in ne tric railways in the United States and Maine, New Hampshire, Vermont, Masof cars of all kinds ordered was 6,001, New York, New Jersey, Pennsylvania, which is an increase of 1,968, or 49.4 Maryland, Kentucky, Michigan, Wisconprices have been too close to production per cent over the number ordered in cost to yield an adequate return on the cost to y cost to yield an adequate return on the capital invested, this being attributable to lack of organization or an understand-been compiled from the orders for rolling of Rhode Island, Pennsylvania, Kening among producers. More and more the glass industry is coming under the refining influence of mechanical means, the year in the rolling stock column the stock column the glass industry is coming under the refining influence of mechanical means, the year in the rolling stock column these States, in 1912, received assistance consumers generally show a preference for machine made goods is a sufficient indication of the direction in which the trade winds are blowing. In window glass nearly one-half of the annual concould be included.

Is complete. Every effort was made to secure returns, and those from car building and the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to allotments in 1913.

In addition to this, several States have taken steps to bring about a more equitable to the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that is complete. Every effort was made to secure returns, and those from car building the fact that the fact that is complete. Every effo could be included.

P	1908.	1909.	1910.	1911.	1912,
Passenger cars, city Passenger cars, interur-	2,208	2,537	3,571	2,884	4,531
ban	727	1,245	990	626	783
Freight and miscellan-	176	1,175	830	505	687
Total	3,111	4,957	5,381	4,015	6,001

-For the Year.-

FIVE YEARS IN ELECTRIC EQUIPMENT.

(From the Electric Railway Journal.)

water heaters, injectors, piping, &c. 1,00,000 1,000,000 1,	Auxiliaries, steam, for electrical installations, such as pumps, condensers, separators, feed-	\$2,000,000	\$2,500,000	\$2,750,000	\$3,000,000	\$3,000,000
Description Laborates La	water heaters, injectors, piping &c	2,000,000	3.000.000	2 250 000	0.000.000	
Delication Contract plants (water-tube) 4,00,000 5,000,000 5,200,000	Dens, buzzers, push-buttons, call-boxes, annunciators	1 200 000	-10001000			210001
Carbon for clerifical plants (other than water-tube) 1,550,000 1,550,000 3,500,000 3,500,000 1,550,000	Doners for electrical plants (water-tube)	4 000 000				
Carboni for lamps, lateries, brushes, or other electrical purposes. 2.25,000 (1,00,000 1,00,000 1,00,000 1,00,000 1,00,000 2,00,000	Bollets for electrical plants (other than water-tube)	1 500 000				
Conduits turaleres, fatteries, principes (225,000 1,200,0	Cables, underground, aerial, and submarine	10,000,000				
Conduits (underground) and similar material. 193,000	datable for lamps, catteries, brushes, or other electrical purposes	2 250 000				
Dynamos and motors, including parts of machines, boosters, belancers, rotary converters,	Circuit-breakers					5,500,000
Dynames and motors, including parts of machibines, boosters, balancers, rotary converters, motor-generation, &c., and all motor appliances, such as in automobiles, not specifically enumerated in this list.	Conduits (underground) and similar material				2,000,000	2,500,000
Description Color	Dynamos and motors, including parts of machines boosters, belancers, return convert	500,000	700,000	850,000	750,000	1,500,000
Electropating and other electricity apparatus not elsewhere specified 1,000,000 1,00	motor-generators, &c., and all motor appliances, such as in automobiles not and					
Electrostatic machines, induction coils, medician set slewchere specified 1,000,000	cincally enumerated in this list	50,000,000	70,000,000	75,000,000	90,000,000	100 000 000
Elevators, electrical machines, induction coils, medical sets, &c. 100,000 600,000 700,000 700,000 800,000 100,0	Electropiating and other electrolytic apparatus not elsewhere specified	1.000.000				
Engines, gas or gasotine or oil, used to drive electrical machinery. 6,00,000 2,00,000 2,00,000 2,00,000 1,00,000 2,00,000 1,000,000 1,000,000 1,000,000 1,000,000	Electrostatic machines, induction colls, medical sets, &c	500,000				
Engines, steam (reciprocating), used to drive electrical machinery. 9,000,000 1,200,000 12,000,000 14,000,000	Facvators, electric (mechanism only)	1,600,000				
Engines, steam (reciprocating) used to drive electrical machinery 9,000.001 12,000,000 12,000,000 10,000,000 11,000,000 10,000,00	rdigines, gas of gasotine of oil, used to drive electrical machinery					
Price alarm apparatus, also burglar alarms, crossing indicators, &c. 1,100,000 1,200,000 1,000,000 1,000,000 1,000,000 1,000,000	Engines, steam (reciprocating), used to drive electrical machinery					
Pixtures for electric lighting.	Fairs, electrically operated and direct-connected					
Friscs of electric lighting.	Pire-glarm apparatus, also burglar alarms, crossing indicators. &c.					
Classware, electrical. 2,000,000 1,000,000 1,500,000 1,500,000 1,500,000 1,6	Fixtures for electric lighting					
1.00,000 1.00,000	F USCS					
Treating and cooking apparatus, electrical 1,000,000 1,000,000 2,000,000 2,000,000 2,000,000 2,000,000 2,000,000 1,000,0	Glassware, electrical					
Instruments for measurement anny (carbon or metal filaments) Instruments for measurement anny terror call kinds; also ground detectors, scientific and Iaboratory apparatus, photometers, Leyden jars, N-ray outfits, &c	Heating and cooking apparatus, electrical					
Institution	Incandescent lamps (carbon or metal filaments)	waredeen				4,000,000
Insulators (glass and porcelain) Insulators (glass and porcelain) Insulators (glass and porcelain) Interior wiring supplies, as tubing, interior conduit, molding, junction boxes, rosettes, cutlet boxes, &c. Lightning arresters. 225,000 Mercury-vapor lamps. 275,000 Mercury-vapor lamps. 270,000 Mercury-vapor lamps. 275,000 Mercury-vapor lamps. 2700,000 Mercury-vapor lamps. 270	instruments for measurement and meters of all kinds; also errand detectors admitted and	11,000,000	11,000,000	17,500,000	19,000,000	22,000,000
Insulators (glass and porcelain)	laboratory apparatus, photometers, Leyden jars, X-ray outfits, &c	2,000,000	2.250.000	9 300 000	2 100 000	E 000 000
Interior wiring supplies, as tubing, interior conduit, molding, junction boxes, rosettes, cutlet boxes, &c. Lighting arresters. Lighting arresters. 220,000 According to the conduct of the conduct o	insulating material, fiber, tape, &c	1,700,000			-1.000,000	
outlet boxes, &c. Lightning arresters. Mercury-vapor lamps. 25,000 2,000,000 50	Institutors (glass and porcelain)	1,350,000				
Mercury-vapor lamps	interior wiring supplies, as lubing, interior conduit, molding junction bower wester			2,000,000	2,300,000	3,500,000
Poles and wire towers, cross-arms, brackets and pins 200,660 500,000 700,000 800,000 900,000	Lightning arrestors			2,500,000	4,000,000	5,500,000
Prinary batteries Prinary batteries, cross-arms, brackets and pins Prinary batteries	Mercury-game larges		400,000	500,000	500,000	
Railway supplies, electric, such as trolleys and other contact devices, strain insulators, cross-overs, rail-bonds, &c. Rheostats, car controller, motor starters, &c. Rheostat, car can respect to the starters, &c. Rheostats, car controller, motor starters, &c. Rheostats, car controller, motor starters, &c. Rheostats, car controller, motor starters, &c. Rheostat, car can respect to the starters, &c. Rheos	Poles and wire towers cross-arms brackets and ping			700,000	800,000	
Cross-overs, rail-bonds, &c. 2,200,000 3,000,000 3,250,000 5,000,000 7,200,000	Primary batteries		4,000,000	5,000,000	a 5,500,000	
Cross-overs, Tail-bonds, &C. 2,200,000 3,000,000 3,250,000 5,000,000 7,200,000	Hallway supplies, electric, such as trolleys and other contact devices strate to the	1,000,000	2,000,000	2.500,000	2,700,000	
Shaffing pulleys, clutches, fee, used in electrical generating plants. 2,600,000 4,700,000 5,000,000 5,000,000 5,000,000 5,000,000	cross-overs, rail-bonds, &c	2.200.000	2 000 000	2 000 000		
Signs, electric. Signs, electric. 1,000,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,200,000 1,000,000 1,000,000 1,000,000 1,000,000	Kingustals, Car controller, motor starters, &c					
1,000,000 1,20	CHAILINE, Dulleys, Chilches, Arc., used in electrical concrating plants					
Steam turbines, used to drive electrical machinery. 7,000,000 12,000,000 14,000,000 10,000,000 14,000,000 10,000,000 15,000,000 14,000,000 10,000,000 12,000,000 10,000,000 12,000,000 10,000,000 12,000,000 10,000,000 12,000,000 10,000,000 12,000,000 10,000,000 10,000,000 10,000,00	Signs, electric					
Storage batteries, including those used in automobiles	Sockers, Switches, Cul-outs					4,000,000
Telegraph instruments and apparatus. 5,500,000 6,600,000 600,0	Steam turbines, used to drive electrical machinery					7,500,000
Telephones, telephones witerboards, and distinctively telephonic apparatus. 15,000,000 15,000,000 20,000,000 20,000,000 20,000,00	Storage patteries, including those used in automobiles					14,000,000
Comparison Com	relegiate instruments and attaratus					12,000,000
Water-wheels, used to drive electrical machinery 3,025,000 4,000,000 4,500,000 5,000,000 10,000,000 Welding apparatus, electric. 3,000,000 4,000,000 3,500,000 30,000,00 20,000 5,000,000 400,000 Wire, bare. 18,000,000 22,000,000 24,000,000 25,000,000 30,000,000 30,000,000 30,000,000 30,000,000 25,000,000 30,000,000 30,000,000 15,000,000 15,000,000 15,000,000 15,000,000 18,000,000 15,000,000 </td <td>Telephones, Lelephone switchboards, and distinctively telephonic armagatus</td> <td>35 000 000</td> <td></td> <td></td> <td></td> <td>650,000</td>	Telephones, Lelephone switchboards, and distinctively telephonic armagatus	35 000 000				650,000
Welding apparatus, 3,090,000 4,000,000 3,500,000 3,000,000 5,000,000 Welding apparatus, 18,600,000 2,000,000 23,000,000 200,000 400,000 Wire, bare. 18,600,000 22,000,000 25,000,000 25,000,000 25,000,000 25,000,000 33,000,000 Wire, weather-proof. 11,000,000 12,000,000 15,000,000 15,000,000 18,000,000 Wire, all other electrical 4,000,000 5,000,000 5,000,000 5,000,000 5,000,000 5,000,000 5,000,000 Wireless apparatus. 500 600 5,000,000 5,000,000 5,000,000 5,000,000 7,000,000		2.005.000				16,000,000
Weing apparatus, electric. 18,00,000 20,000 </td <td>water-wheels, used to drive electrical machinery</td> <td></td> <td></td> <td></td> <td></td> <td>10,000,000</td>	water-wheels, used to drive electrical machinery					10,000,000
Wire, rubber-covered. 18,000,000 22,000,000 24,000,000 25,000,000 30,000,000 Wire, weather-proof. 11,000,000 12,000,000 15,000,000 15,000,000 15,000,000 18,000,000 Wire, all other electrical 4,000,000 5,000,000 5,000,000 5,000,000 5,000,000 5,000,000 5,000,000 Wireless apparatus. 500,000 5,000,000 5,000,000 5,000,000 5,000,000 7,000,000	Weiding apparatus, electric					5,000,000
Wire, weather-proof. 11.000,000 12,000,000 15,000,000 15,000,000 18,000,000 Wire, all other electrical 9,000,000 10,000,000 12,000,000 13,000,000 15,000,000 15,000,000 Wireless apparatus. 500,000 5,000,000 5,000,000 7,000,000	WIFE, DAFE					400,000
Wire, all other electrical 9,000,000 10,000,000 12,000,000 15,000,000 15,000,000 Wireless apparatus. 500,000 5,000,000 5,000,000 5,000,000 7,000,000						33,000,000
Wireless apparatus. 4,000,000 5,000,000 5,000,000 5,000,000 15,000,000 7,000,000 7,000,000 7,000,000 7,000,000		0.000,000				18,000,000
Vireless apparatus. 500 000 500 000 7,000,000 7,000,000					13,000,000	15,000,000
500,000 350,000 400,000 500,000	Wireless apparatus.				5,000,000	7,000,000
		500,000	500,000	350,000	400,000	

work of the fiscal year ended June 30, and at higher prices, the increase past of his business and pings. The principal method of ridding they are more thrifty; dalay cowes give pings. The principal method of ridding they are more thrifty; dairy cows give Immediate future prospects and painstaking a marner As history notoriously rethis is the object. The principal method of reading are enhanced. The losses and damage this is the object of ticks is by dipping them in an arsenic solution. A number of new dipping vats have been constructed during caused by the ticks are estimated at from \$40,000,000 to \$100,000,000 dollars an-The great benefits from getting rid of nually. R. A. RAMSAY.

Chief Field Inspection Division, Department of Agriculture.

mary at this time of the year 1912, involved over 4,500,000 inspections amounting to \$2.25 to \$15 a head. More A YEAR OF IMPROVEMENT IN RETAILING SHOES

This has been a year of big improvement among shoe dealers. All over the
country they have "braced up" in every
department of their work. They have imdepartment of their work. They have improved their store service and reached question.

They are not done improving yet, not out for wider trade; have paid more at-tention to careful fitting of customers; points of betterment to be taken up. tention to careful fitting of customers; points of betterment to be taken up.

Just at this time, the double-jointed duestion of "prices and profits" is the biggest question before the trade; but this is going to be solved, and solved by the same kind of straightforward thinking that has solved other questions. The

will show the biggest single year's pro- a still better one. gress that has ever been made in the

possible a true representative of the proprietor; have put new ginger into their advertising, and new skill into their window trimming; have kept a closer watch on styles, and have done more without the ing that has solved other questions. The shoe dealers of this country are fast getting into the habit of looking things over the situation earnestly and carefully, and then translating their decisions into acthen translating their decisions into action. It has been a good year for live progressive development. shoe merchants, and next year will be

Boot and Shoe Recorder.

SHOE EXPORTS TO LATIN AMERICA INCREASING

1				
	~191		~19	12-
The second secon	Quantities. (pairs)	Values.	Quantities.	Values.
Central America Mexico Cuba Other West Indies. Argentina Brazil Other South America	394,965 514,337 2,240,570 440,600 84,774 46,232 165,685	\$752,014 1,064,903 2,479,963 459,670 272,900 142,994 335,369	366,030 615,041 2,217,304 438,381 97,053 84,141 204,054	\$687,164 1,296,546 2,339,602 454,769 283,567 222,678 454,280
Totals	3,887,163	\$5,507,813	4.012.004	\$5 738 806

1912 ADVANCES

Compilation of State Progress Under Weeks' Law in Co-operation With Forest Service.

FIRE PATROLS EFFECTIVE

State forestry made greater progress in 1912 than in any preceding year. gave the impetus for this progress. Un- the States which are equipped to handle der one of its provisions the Federal gov- work of this kind include all of the New der one of its provisions the Federal government was empowered to co-operate with the States for the protection from fire of the forested watersheds of navifire of the forested watersheds of navigable streams. The Federal Forest Service was given charge of the expenditure braska in the Middle West; and Colorada in the M of the \$200,000 appropriated by Congress for carrying this provision into effect. Each State which sought co-operation Each State which sought co-operation the state which sought co-operation in the Middle West; and Colorado. Some of these States have established public nurseries for the growing of young forest trees primarily for distribution at cost to private owners; or they have severed the trees from com-Each State which sought co-operation was required to furnish a sum equal to that alloted to it from this fund by the Federal government—in no case more reduced by the public at wholesale prices. This is one of the most effective methods of the case where the property of the property of the public at wholesale prices. This is one of the most effective methods of the property of th States received assistance from the Fed-eral government in 1912 under this law, many States on the Atlantic seaboard and six more have done enough work to warrant Federal aid. Three of these have actually requested such aid. With plished, but for what it augurs for the future. The next few years are likely the close of the calendar year 1913, however, the \$200,000 originally appropriated will be exhausted. Other Appropriations Needed.

In his report of legislation needed for \$200,000. The maintenance of patrols and the methods now employed to take the place of the old method of fighting fires | Col after they had gained headway.

The accompanying table shows in de- date methods and have appropriated funds for putting them into effect include sachusetts, Rhode Island, Connecticut, these States, in 1912, received assistance from the Federal government under the terms of the Weeks law. Kentucky, Montana, and Idaho have requested cooperation of this kind, and will receive

New York's Progressiveness.

The three forest taxation laws passed by New York in 1912 mark a distinct advance toward an equitable method of taxing forest lands; first, through sepa-rating the land and trees for assessment purposes; second, by placing a nominal valuation on the land or exempting it entirely; and, third, by exempting the rely; and, third, by exempting it sfor a period of years or until they cut. These principles have been ted by Michigan in a tax exemption passed in 1911 care.

New York

Administration, \$29,650; fire protection, \$29,700; purchase, maintenance, and survey of land, \$80,200; reforestation, \$25,000. 224,550 and passed in 1911 care. trees for a period of years or until they aw passed in 1911, and first put into effect during the past year. Possibly the greatest progress has been made Massachusetts, which adopted, at the general election of November 5, 1912, an mendment to the State Constitution giving authority to the Legislature to prebe such methods of taxation for forest lands "as will develop and conserve the forest resources" of the State. The next step is the determination of the methods to be adoped. In Pennsylvania an amendment having a similar purpose was passed by the Legislature of 1911. passed by the Legislature of 1913 is passed by the Legislature of 1913 il be submitted to the people of the State for approval at the general election

Maryland provided for an extension of the State forest reserve area, and for protection on private lands. tucky passed a complete forest law, providing for the employment of a State forester, for the establishment of a fire for the employment of a State protective system, and for the acquisi-tion of State forests, and made a liberal appropriation for carrying the law into

Forest Reserves Increasing. As a rule, the areas of State forest reserves are being constantly increased. The States which have established pub-

THE PAPER INDUSTRY IN 1912.

The paper industry in the United States was affected by no unusual condition during the year 1912. There was, therefore, no material change in production or price. What is particularly notable Is that within the twelve months just ended the industry failed to expand as it had done in former years; this due to had done in former years; this due to the uncertainty and anxiety, concerning the future.

the future.

Those who have their money invested in the enterprise very naturally hesitate to enlarge their operations when the market is so seriously threatened with oreign invasion.

(Unrestrained access to the American market by the Canadian manufacturer is effected by section 2 of the McCall bill, the only thing which survived the abortive effort to establish reciprocal commercial relations with our Dominion

Immedately upon the passage of the act, in July, 1911, by which our doors were thrown wide open to Canada, the manufacturer across the border bestirred himself in the extension of existing plants and the construction of new ones, that the American market might be oc-

From an unpretentious beginning it has enlarged until now the invested capital amounts to more than \$400,000,000; 80,000 or more people are directly given employment, not to mention the countless number engaged in allied and dependent interests; a total wage exceeding \$40,000,-000 is annually distributed, and a yearly production now reached with a value ap-

The last decade has witnessed a very great increase in the cost of practically everything entering into the production of paper. Pulpwood itself has advanced 40 to 50 per cent, lime from 50 to 60 per cent, rosin more than 100 per cent, \$5,738,606 and the materials required for construc-

AND DESCRIPTION OF THE PARTY OF

lic forests include New Hampshire, Ver-Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Indiana, Michigan, Wisconsin, Minesota, and Idaho. These forests are protected from fire, and, in most cases, their waste areas are being reforested.

State Fore	sts.	
State.	Number of Forests.	Total Acreage.
Connecticut	. 4	2,100
ndiana	. 1	2,000
daryland	. 4	1,950
lassachusetta	. 5	15,000
fichigan	. 53	231,350
finnesota	. 3	43,000
New Hampshire	. 4	6,90 .
New Jersey	. 6	13,720
Yew York	2	1,644,088
ennsylvania	ARTON CO.	974,890
outh Dakota	2	60,000
ermont	7	4.375
Visconsin	1	400,000
		-

Co-operation between the States and The Weeks law, passed in March, 1911, private owners is being extended, and and in the Middle West.

The progress of the year has been notable, not only for what it has accom-

to be marked by an advance in which the legislation of 1912 will appear only as a beginning.

HERBERT A. SMITH.

Editor Forest Service, United States Department of Agriculture. ANNUAL APPROPRIATION BY THE STATES
FOR FOREST WORK.

(Excluding special appropriations for courses in
forestry at universities, colleges, and schools.) Administration and publications..... 5,000

onnections—
Administration, publications, forest investigations, \$8,500; fire protection, \$1,500; purchase of lands, \$2,500; maintenance of State forests, \$1,500. Publications Pire protection..... Chiefly for maintenance of the State Forest Administration and planting..... Kentucky—
Administration, fire protection, purchase of forest lands. Fire protection chiefly..... special tax on wild lands for fire protection. 67,900

Administration and publications, \$20,000

fire protection, \$15,000; reforestation fund, \$10,000; nurseries, \$4,000....

Fire protection, \$10,000; administration, publications, and the care of State forest reserves

Jaries and expenses of State Porester's

Administration, \$6,100; fire protection, \$12,100; forest nursery, \$300.

Administration, \$10,500; fire protection, \$15,000

Administration and publications...... \$3,000 Chiefly for reforestation work..... 9.750 Pregon—
Fire protection..... Fire protection, \$25,000; purchase of lands, \$25,000; remainder chiefly for administra-tion and protection of State forest re-

Administration, \$1.500; fire protection, \$1.500 cuth Dakota—
Fire protection. ermont— General appropriation for forest work, in cluding fire protection, purchase of State irginia— Chestnut bark disease..... 5,000

Administration and fire protection, \$35,000; purchase of lands, \$60,000..... "Probably; collected from a license tax on the imber-out of the State.

1No direct appropriation, but about \$5,000 is available from the several land grant income funds.

Fire protection 37,500

addition, from \$50,000 to \$100,000 is received from sale of timber and other products from prest reserve area, which may be expended on vari-us kinds of forest work, including protection from

tion and maintenance of plants proportionately.

Labor, which constitutes one of the ost important items of expense, on the one hand, demands and receives a great-ly increased wage, while, on the other, has noticeably decreased in efficiency Yet, in spite of this tremendous in-rease in the cost of manufacture, the changed conditions could not have been met except by a constant effort to effect greater economy and efficiency in equip ment and management. There is, how-ever, a limit in the latter direction, which by many producers already has been

practically reached.

Year after year the tariff on paper (Unrestrained access to the American market by the Canadian manufacturer protection remains; while there has been protection remains; while there has been no corresponding reduction of the import duty on the supplies which the papermaker is required to buy. C. F. MOORE,

Editor "Paper.

THE GROCERY TRADE.

The year 1912 has been one of development for the grocery trade. Its progress has been marked by radical moves on the part of retailers, not the least of which is the great number of wholesale houses owned by retail grocers which have come into being, and the number of buying exchanges established, indications of an unrest on the part of retailers and a protest against wholesalers and manufacturers discriminating in prices in favor of big buyers, such as chain-store systems, mail-order houses, &c.

Another striking feature of the year's work is the greater interest taken by the "little business man" in politics, associations of retailers all over the country having taken an active part in the nomination and election of office holders, both Federal and State. The result has been a closer welding of the associations.

reful and painstaking a manner ble. As history notoriously reelf, this is the only means he the past year. making logical plans for the fu-

back to 1911: This year was really the ticks are already being realized in of the hardwood product was at much below its true value, moving more freely at ad-es, and even before midsum-was very little high-grade loyed. The sales of low-gradually increased until riage in low-grade stock as high-grade. To be sure, and firsts and seconds

FERTILIZER IN THIS COUNTRY.

"Fertilizer investigations by the Bureau of Soils," said Prof. Milton Whitney, chief of the bureau, "have shown that the United States contains ample raw material for the production of all the standard fertilizer material that it now demands.

"The giant kelp groves on the Pacific Coast, from the Mexican border to Cape Flattery, have been mapped, and work is in progress, from which it will soon be possible to estimate the value of this great resource. It is known now that it can produce several times the present needs of the country in potash salts. The investigations of the desert basins of the United States has demonstrated that potash salts of commercial value are known at least in one of the basins, namely, Searles Lake.

"It seems probable from the bureau's investigations that practically unlimited supplies of potash from feldspar and similar minerals may be obtainable. Contrary to popular impression, none of the fields of phosphate are exhausted. The present fields, together with the unworked area, are known to contain enough high-grade material to supply three times the present needs of the country for more than 1,000 years.

"It has been shown that while certain fertilizers which have recently come into the American market, such as ground feldspar, ground phonolite, and ground lava, may occasionally produce a favorable result, there is no scientific basis for believing that they would generally produce any special or lasting improvement in the soil, and they cannot be expected to replace the standard mixtures of salts commonly found in high-grade

The country must have, as rapidly as it can be built, additional tracks and terminal facilities, of which it stands in such need to-day.

No practical man would accept a contract for furnishing the facilities required, including additional equipment and terminal facilities, for less than \$75,000 per mile. The question of terminals alone is almost prohibitive. Terminals now in use were acquired when property was cheap, and can be enlarged only by heavy outlay. In many cities it is not even a question of cost, since the area necessary to handle railroad business properly is not to be had at any price; does not exist within the business section where terminals must be located, unless the business itself were destroyed to make room. The new work, then, would amount to \$5,500,000,000 in round numbers, or a yearly average of \$1,100,000,000.

[Extract from letter of James J. Hill to John A. Johnson, Governor of Minnesota, January 14, 1907.]

The steam railways of the United States are required each year to report to the Interstate Commerce Commission the amounts expended by them as investments in (1) new road and equipment, and (2) additions and betterments to existing road and equipment. These amounts are carried to the property account in the balance sheet and are shown there as capital assets. Inasmuch as the commission has required this report since July 1, 1907, the record of the five fiscal years ended June 30, 1912, is now available

As a result of the compilation of investments in road and equipment made by the large railways of the United States, the Bureau of Railway Economics is able to present herewith a more definite statement regarding recent investments in railway property than it has yet been possible to make. The statement covers all railways having annual gross earnings of \$1,000,000 and over. These roads, 175 in number, were operating 220,000 miles of line on June 30, 1912, or about 90 per cent of the steam railway mileage of the country. It probable that the expenditures of these railways for road and equipment represent a greater proportion than 90 per cent of the expenditures of all railways for road and equipment, since the larger roads are better able to make extension and improvements than the smaller and generally weaker roads.

In accordance with the classification prescribed by the Interstate Commerce Commission, the railways report their

The accounts in detail are as fol-

Track laving and surfacing. sings and signs, rlocking and other signal apparatus,

During the five-year period, 1907 to

1912, the 175 railways covered by this compilation expended for road and 003,773,000. This represents the cost of new lines and extensions, whether built and all improvements to existing road

is not possible to distribute \$23, 005,000 of this aggregate amount into expenditures for road, equipment, and by one railway system fails to make such distribution. The balance was expended as follows:

the property transferred.

the total less the cost of road pur-

cent for the five-year period, or from bout 21-2 per cent to 4 per cent an

If the investment he considered by

territorial divisions, it will be found

The larger amount is about

JAMES J. HILL, 1912.

"Ten or fifteen years ago 4 per cent would bring in capital for railroad improvement. The rate has advanced from $1\frac{1}{2}$ to 2 per cent in little more than ten years. The railroads can pay money only as they are permitted to earn it. It is up to the people to say whether or not these terminals and other facilities shall be supplied; just as it is up to them to suffer the severest of the consequences if they are not.

"Two questions arise. The first is, 'Why are the railways not now in a position to borrow the money to build the terminals at once?" The second is, 'What have the railways done to entitle them to confidence, to relief, and to a more fair and generous treatment by the public?"

"The impairment of credit has come from decreased earning power and increased expenses. Rates have steadily declined. The average freight rate per ton mile fell from 9.27 mills in 1890 to 7.53 in 1910. While revenue was shrinking, obligatory expenses have increased enor-

"The railroads of the United States are entitled to both confidence and relief because they have not abused their trust in the matter of capitalization. As a whole to-day they have by far the smallest capitalization per mile in the world; and that they have kept their capitalization low by using for betterment millions of earnings which in Europe would have been handed over to stockholders, leaving the cost of improvements to be charged to capital account. Probably \$60,000 represents about the average actual capitalization to-day. This figure is to be compared with the capitalization per mile in other countries as follows: United Kingdom, \$275,040; England alone, \$314,000; Germany, \$109,788; France, \$139,237."

[Extract from speech delivered at the annual dinner of the Rallway Business Association, New York, December 19, 1912.]

RAILROADS AND SHIPPERS PARTNERS.

"The railroads and the shippers are partners in business, and should co-operate with each other in every possible way. Above all, they should be absolutely honest in their dealings with each other.'

Representing 100,000 shippers of the United States, J. M. Belleville, president of the National Industrial Traffic League, made this statement to the business interests of Omaha in a speech before the Commercial Club of that city, December 19. He urged both parties to be friendly rather than antagonistic, and stated that the sooner the shipper and the railroads realize the fact that their interests are mutual, the sooner will ideal conditions result. Mr. Belleville said also-

"It has been fashionable of late years to balt the railroads; to accuse them of practically every crime on the calendar; also to serve out the same thing in muck-raking magazines and other places. It seems to me the time for that to cease has about come. The interests of the carriers and shippers and producers of freight are so thoroughly intertwined that anything that injures one injures the others."

THE COMPLETED ROOSEVELT DAM.



One of the great enterprises to be credited to the Reclamation Service. The present moment is a proper one point out just what the Reclamation Service has accomplished. The details follow:

The act of Congress approved June 17,1 Commission, the fall and equipment univestment in road and equipment under forty-nine accounts, which are grouped under three main headings: Road, comprising thirty-seven separate Road, comprising six nearly one-fourth, while a very small cational and other purposes. The estimates are cational and other purposes.

this total of \$1,146,884,000 represents are situated. The cash receipts from urchases from construction companies, this source to June 30, 1912, were: Buildand what proportion purchases from this source to June 30, 1912, were: Build-railway companies, the records on file at the commission do not indicate, nor tion and maintenance, \$877,825.82.

re the officials of the commission able. In addition, sales of water to towns to say. It is clear that the purchase and cities, leases of power developed on a road by one railway from another the projects, rentals or carrying charges loes not add anything to the value of for irrigation water, miscellaneous sales railway property as a whole; it represents additional investment on the part of the purchasing road, but adds little or no value not already inherent in the property transferred.

bursement for work done for the Indian Service amounts to \$1,581,236.62. Under the The aggregate investment in road respective laws authorizing these trans-

and equipment as indicated by the present compilation may therefore be considered as a maximum, the net investment of the 175 railways (excluding purchases from other railways) being somewhere between the total of \$3,003,773,000 and \$1,856,880,000, which is shown in the clubing same where between the total of \$3,003,773,000 and \$1,856,880,000, which is 003,773,000 and \$1,856,889,000, which is shown in the following table

NET INVESTMENT IN RECLAMATION PROJECTS TO JUNE 30, 1912 Arizona - California - California proportion of the total consisted of general expenditures, corresponding in a rough way to overhead charges.

Reference to the list of accounts in detail shows that the item "Cost of road purchased" is included under expenditures for road. This item, so far as reported by the 175 railways, aggregated \$1,140,884,000 during the five-year period, or more than one-half of the total expenditures for road. The item covers not only the purchase of road from a construction company, but also the purchase of road from a construction company, but also the purchase of road from a construction of this total of \$1,140,884,000 represents Total primary projects.....

> Included in the above are the expen- area of all projects completed under the ditures on investigation of various so-called secondary projects or enterprises which have not been found to be such as to warrant immediate undertaking.
>
> There are also in addition service since the passage of the act in 1902. The total area under contract for irrigation during 1912 was 835,704 acres. Seven thousand, three hundred and fifty-four miles of

There are also in addition certain investments in townsite development, \$15,677.85; in Indian irrigation, reimbursable, \$306,242.22; and for general expenses, not distributed on June 30, 1912, \$32,902.54; making a total of \$354,822.61.

Three million, twenty thousand six huns. making a total of \$354,822.61.

Three million, twenty thousand, six hundred that through its efforts land values have increased more than \$105,-

a fifth of the net capitalization of these railways, or 20 per cent, while the smaller is about 12 per cent. The net ESTIMATED RAILROAD NEEDS OF capital through appealing to private investors. THE UNITED STATES, 1910-1920

that the largest expenditures have occur in the West, over one-half the total; while over one-fourth have been in the East, and about one-seventh in the on the railways of the United States on the railways of the United States that the largest expenditures have been

in 1920 as compared with 1910, in the way of traffic requirements, and what capital The item "Cost of road purchased" amounted during the five years to \$200,144,000 in the East, \$207,122,000 in the South, and \$739,618,000 in the West.

The main requirements that the railways will be forced to meet for 1920 will

Additional main track (second, third, and fourth tracks). ard track and sidings New locomotives. New cars of all kinds.

Additional terminal facilities. Elimination of grade crossings. Substitution of steel for wooden cars.

Estimates regarding the re- than 60 per cent. ly on the probable tendencies in the de-velopment of the technique of railroad-units in the following table:

Increase in track and equipment dur-ing the next ten years will be governed almost wholly by the demands put upon the railways in the form of increased traffic. It will be necessary first of all, then, to make an estimate of the prob-able increase in traffic between 1910 and This may be done on the basis of shown for Groups I to III and the

PERCENTAGE OF INCR	EASE	
	1900	1910
	over	over
	1890.	1900.
Item and Group.	Pct.	Pct.
Ton miles-		
Group I	57.2	56.3
Group II	77.6	59.7
Group III	76.5	78.0
Groups I-III	75.8	66.6
United States (all groups)		80.1
Passenger miles-		
Group: I	16.9	47.8
Group II	39.6	67.1
Group III	26.3	79.0
Groups I-III		65.7
United States (all groups)	35.4	101.6
The increase in the railw	av 1	business
of a country depends almos		
the increased transportation		
made by the inhabitants.		
tion demands vary directly		
factors-increase in the nu	mber	of in-
habitants and increase in		
per capita. The last nam		
per suprite. The last hall	icu i	merease

largely rests, in turn, upon the increase of population density, i. e., the increasing interdependence of individuals and sections upon one another.

The population of the United States increased 20.7 per cent between 1890 and 1900, and 21.0 per cent between 1900 and 1910. The rate of increase was almost

exactly the same for the two decades, and it is probable that the increase

in the next ten years will be nearly,

This is an effort to estimate, with the if not quite, at the same rate. It will be seen that freight traffic in-creased at a lower rate from 1900 to 910 than from 1890 to 1900 throughout practically the whole territory included the table; while the passenger trafic increased at a considerably higher ate throughout. In Groups I to III ton niles increased 66.6 per cent from 1900 to 1910, as compared with 75.8 per cent from 1890 to 1900. An increase of 50 per cent from 1910 to 1920 may be estimated with probable safety. For the United States as a whole ton miles increased 80.1 per cent from 1900 to 1910, as compared with 85.8 per cent from 1890 to 1900. An estimated increase of 70 per cent

from 1910 to 1920 will probably be found to e within the truth. In Groups I to III passenger miles increased 65.7 per cent from 1900 to 1910, as impared with 30.1 per cent from 1890 to With increasing density of population, the railway passenger service will be subjected to ever increasing demands, and it is not likely that the rate of its growth will be much if any lessened i the next ten years, as compared with the last ten years. An estimate of 50 per cent would therefore seem to be con servative. For the United States as Iniversalization of block and other auto- whole, passenger miles increased 35.4 pe matic signal systems.

The extent of some of these requirefrom 1900 to 1910. To estimate the inments can be estimated directly from crease from 1910 to 1920 is not an easy past experience in the way of increase task, but it will probably be not less

maining items must depend partly on the probabilities of new legislation and part-

		Estimated
		percentage
		of increase,
Item.		1910-1920.
Ton miles, 1910		
Increase, 1910-1920		
Estimated ton mile	s. 1920	
Passenger miles, 19:		
Increase, 1910-1920		
Estimated passenge		
Tanacago.	Estimated	
		United
	percentage	States
Groups I-III.	of increase,	(all groups)
Traffic.	1910-1920.	Traffic.
125,024,756,000		255,016,910,00
187,537,084,000		433,528,747,00
14,399,925,600		32, 338, 496, 00
7,199,962,500	60	19,403,098,00
21,599,887,500		51,741,594,00
62,512,323,000	70	178,511,837,00
With similar	care all preli	minary steps
have been take	en which lead	to the fol-

lowing estimates: Single Track.

Groups I-III Additional Main Track.

Yard Track and Sidings.

New Locomotives.

reight locomotives— Number needed in 1920..... Number in service in 1910...... Number to be added, 1910-1920....

Passenger locomotives— Number needed in 1920... Number in service in 1910. Number to be added, 1910-1920 Passenger Cars. Number in service, 1910..... Estimated increase, 1910-1920... 4,616 Freight Cars. Number required in 1920.... Number in service in 1910.... Estimated increase, 1910-1920... Company's Service Cars.

Number in service, 1910..... Estimated increase, 1919-1920, 50

Item,
Single track, miles.
Additional main track, miles.
Yard track and sidings.
Freight locomotives.

Passenger locomotives... Freight cars....

Passenger cars.

We may assume, for purposes of a preliminary estimate, that single track costs on the average \$30,000 a mile, additional motives, \$16,000; that freight cars cost \$1,000 and passenger cars, \$12,000, and nents cited above will cost the follow-

ing amounts: Additional main track.

Yard track and sidings.

Freight locomotives.

Passenger locomotives.

Freight cars.

In addition, the following items of cost ist be considered: Additional terminal facilities Elimination of grade crossings.
Substitution of steel for wooden cars. Substitution of steel for iron car wheels. Universalization of various signal sys-

tiltee cost of additional terminal facilities has been arbitrarily estimated at 15,000,000 a year, or \$1,750,000,000 for the ten years ending 1920.

Elimination

Elimination of grade crossings, it has been estimated, will cost at least \$5,000,-060 a year, or \$50,000,000 for the ten years. Of the 1,100,000 new steel freight cars of only three of the leading concerns if tunities of the immediate futurel

Railroad Construction of 1912 Lowest Since 1897

The statistics compiled from official sources and published in the Rai Age Gazette in its issue of December 28, show that one has to go back f teen years, namely, to 1897, to find a year in which as small a railroad in was built as in 1912, and one has to go back six years, namely, to 1900, a year in which as large a number of locomotives and as large a num freight cars were ordered. The marked increase in activity along increase lines during the last part of 1912 is shown by the fact that between three times as many freight cars were actually built in 1912 as in 1911 third more locomotives were actually built in 1912 than in 1911.

The official figures compiled by the Railway Age Gazette for the of railroad receiverships, the number of railroad foreclosure sales amount of block signal mileage, all give indications of the same condiare illustrated by the extraordinary small amount of new railroad mileau and the very heavy orders for new equipment, namely, that capital is r to go into new railroad enterprises and that the prosperity of the last 1912 is taxing existing railroad facilities heavily.

Notwithstanding the fact that 1911 was considered a very year for railroad building, there was 3,066 miles of new first track built in while in 1912 there was only 2,997 miles built. The 2,997 miles built in Alas was built in forty-one States, no new mileage at all being built in Alas five States. The largest mileage was built in North Dakota, in which 347 miles of first track was built, with Texas second, in which 336 miles have the states of the mileage built in North Dakota. built, A detailed list of the mileage built in 1912 and 1911 by State

TABLE SHOWING MILEAGE OF NEW FIRST TRACK BUILT IN 1912, CLASSIFIED BY SEATH

No	of Cos.		No. of Cos.	
	milding.	1912.	building.	19)
	2	18,50	1	22, (4)
Alabama		*****	1	47.5
Alaska	-2	105.38	1	11.61
Arizona	4	67.19	3	28.00
Arkansas	7.0	78.75	10	118.38
California	1	6.27	4	181.75
Colorado	8	181.90	6	115.00
Florida	11	152.75	8	192.49
Georgia	5	105,03	7	1651,000
Idaho	3	24.54	3	4.61
Illinois		8.00	1	30.1
Indiana	1 4	87.54	2	18.33
Iowa		92.46	ĭ	52.00
Kansas	3			125 45
Kentucky	4	119.63		53.00
Louisiana	6	89.00	-3	
Maine	2	5.79	* * * * * * * * * * * * * * * * * * * *	21.49
Maryland	1	1.00	2	21.17
Massachusett	1	5.00	**	1007 113
Michigan	2	7.80	3	27.45
Minuesota	4	47.26	.7	40.08
Mississippi	3	20,00	2	19.20
Missouri	1	0,96	1	11.70
Montana	4	130,15	4	94.42
Nebraska	1	36.87	1	30,61
Nevada	3	47.24	1	9.00
New Jersey		*****	2	28.46
New York	1	3.17	. 2	17.22
North Carolin	11	93,45	5	46.51
North Dakota	3	346.91	3	209.34
Ohio	2	12.75	2	5.75
Oklahoma	5	242.16	.3	71.00
Oregon	2	24.71	7	224.21
Penesylvania	10	68.80	9	92.99
South Carolina	4	78.50	2	32.50
South Dakota			2	21.87
Tennessee	5	28.51	9	66.00
	. 9	335.66	10	413.78
Texas	3	24.33	2	24,30
	1	1.00		******
Vermont	6	9.60	3	16.68
Virginia	5	105.73	4	90.39
Washington		99.22	4	84.46
West Virginia	4	14.57	4	209.13
Wisconsin			3	42, 40
Wyoming	1	69.00		Ta. 80
Total	161	2,997.08	146	3,066.98
Canada	20	2,232,10	19	1.898,59
Mexico	4	212.18	8	351,00
41			during the	wone w

The totals for cars and locomotives ordered during the year, which compiled by the Railway Age Gazette, show the heavy demands that made on railroad facilities during the last part of 1912, both for the move of extraordinary heavy crops and for the general business resulting reater industrial activity. The new equipment ordered in 1912 as comp with 1911 is as follows:

In no year since 1906 has there been such a large number of freight rdered; in 1906 the total was 310,315. In no year since 1906 have there as many locomotives ordered; in 1906 the total was 5,642. The records for new equipment actually built during the year does not

make quite such a good showing. Compared with 1911 it is as follows: Of the total freight cars built, 66,520 were reported of steel or steel und

rame, and 63,330 were not specified. Twelve railroads with a total mileage of 3,762 miles, went into the hand of receivers during 1912. These roads had a total funded debt of \$106,964,854 and outstanding stock amounting to \$74,493,643. The three important road placed in the hands of receivers were the Pere Marquette, the Denver, North western & Pacific (the Moffat road) and the Kansas City, Mexico and Orient both of which later were independent companies that had attempted to raise

No important roads were sold under foreclosure in 1912. There were welve unimportant roads sold, with a total mileage of 661 and a total funded cbt of \$7,995,300, with \$17,925,690 stock outstanding.

capital outlay of \$105,000,000. Steel Passenger Cars.

The excess cost of the 1,000 entirely new cost a total of \$56,500,000. steel passenger cars that will be put United into service by 1920 has been taken accost items as follows: count of in making up an estimate of the 5.300,844 average price of the new cars. Another 2.135,121 1,000 cars will replace passenger cars now in service. Assuming that they cost Additional terminal fa-United ger cars, the capital outlay involved in this substitution would be 1,000 times \$2.000, or \$2,000,000.

It has been estimated that at least a million steel car wheels will replace a million steel car wheels will replace

The estimated requirements in the dif-ferent factors of rallway equipment in the dif-1990 may be supersisted by the street of Estimated Necessary Increase, 19101920. The difference, 57, multiplied by 1,000,000, represents the ost of replacing iron by steel car wheels United in the next ten years. The total is \$7,-000,000.

Signal Systems.

It is very difficult to ascertain the aver-12.791 It is very difficult to assume the Control States as a whole, conserved terms. The cost varies according to the character of the installation, the kind of the requirements at \$5,962,000,000, or apparatus, the number and cost of main- round numbers \$6,000,000,000.

put into service between 1910 and 1920, it tenance of signal cabins per mile, and has been estimated that 400,000 will represent entirely new equipment. Allowance particular railway. Secretary Marble, of for the higher cost of these over the for the higher cost of these over the cost of wooden cars was made in the estimate of cost per car. The other 700,000 will go to replace wooden cars now in service. The excess cost of a steel over a wooden car is not less than \$1.50 per car, and probably averages more. This remark is based on the statement made to the International Railway Congress of 1910 that a wooden hopper car costs from \$700 to \$750, while a corresponding steel car can be built for about the Interstate Commerce Commission, estimates the cost of installing automatic block signals on a double track road at from \$1.500 to \$3,000 per mile. Statistics of actual installation cost furnished by the Union Pacific system, range from \$1.500 per mile. The Pennsylvania Railroad states that the cost of installing automatic signals on that system has varied all the way from \$1,000 a mile. costs from \$700 to \$750, while a cerresponding steel car can be built for about
\$900. On the basis of a differential of
\$150 per car, the 700,000 steel freight cars,
which will be substituted for wooden cars
between 1910 and 1920, will call for a
mile. It is probable, therefore, that an estimate of \$1,500 a mile
for automatic signal systems is a conservative one. For non-automatic systems the cost is probably not over \$200 35,000 miles of automatic and 20,000 miles of non-automatic signal systems between 1910 and 1920, above estimated, would

We can then bring together all the

Track of all kinds \$393 185 000 \$2 029 855 000 526,415,000 1,684,250,600 Not ascertained. 1,750,000,000

In brief, the estimate, capital requirements of the railways during the terpears ending 1920 will probably be for Groups I-III over a billion dollars, sin the total amount reached above considerably increased by the addition of cost items not yet ascertained. For

on the average \$20,000 a mile, additional main track \$20,000, and yard track and sidings \$15,000; that freight learners and Electrical Industrial Growth in 1912 deducted from the total would leave a

By T. C. MARTIN, in "Electrical World." deducted from the total would leave a absurdly small amount for the 800 oth can be cited as more active in electrical concerns. In the traction field the recompany's service cars, \$600 apiece. On development than was 1912. It was certhe basis of these estimates, the require- tainly much better than 1911, and back

227,004,000 public for its electrical apparatus and in telephony the Bell system of service during 1912 was a little in excess reached \$180,000,000 in 1911, and this up to August ran to \$130,000,000. In 55,752,000 130,416,000 undoubtedly somewhere in that neighthorhood and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and may easily have reached spross \$5,000,000 up to nearly \$42,000.00 and \$6,000 up to nearly \$6,00 The activity of the electrical manufac-

DATA ON ELECTRICAL INDUSTRIAL GROWTH.

ports of largely increased earnings have The central-station field has been b Jos. 75,000 It would appear from the statistics beyond precedent, and most systems e dedd their Christmas peaks weeks as 227,004,000 public for its electrical apparatus and In telephony the Bell system along the statistics of the contral station neighborhood below that the amount paid by the American ceeded their Christmas peaks weeks as In telephony the Bell system along the statistics of the contral station neighborhood below the statistics of

As to the miscellaneous class, body is familiar with the gigantic pansion going on in electric vehicle electric heating and cooking, elect themistry, electrometallurgy and other branches, all running into their millio

Electrical apparatus made. \$325,000,000 \$350,000,000 Electric railway earnings. 575,000,000 \$25,000,000 Telephone carnings. 375,000,000 \$50,000,000 Telephone carnings. 75,000,000 \$5,000,000 Isolated plant service. 125,000,000 125,000,000 Isolated plant service. 100,000,000 125,000,000 Isolated plant service. 100,000,000 125,000,000 Isolated plant service. 100,000,000 \$2,110,000,000 Isolated plant service. 100,000,000 \$2,110,000,000 Isolated plant service. 100,000,000 Isolated plant service. 10

FISH Statistic

Bus MILLIO

re is that a numb nsportation large per ded June ly, cotton. orts on t ey operated ed about or a basis, it ilroads of

ILEAGE OF

p III, Ne

On account 'g methods. resent-day n As a rule ade in co-or e United enterprise

operative nishes an e instruction Iture. The

re usually me charge at ven and who netimes an npanies the

Assistant (ment d

Many Unprecedented High

Marks During the Year.

Remarkable Group of Maximum Levels

in Trade and Finance-Agricultural

Output Excels All Other Years-

Highest Rate of Industrial Activity,

Manufacturing Output, Iron and

Copper Metal Production, Railroad

Freight Traffic and Over-Sea Com-

In trade and agriculture the year 1912 established a long list of high records, and if the number of these records achieved

were itself a criterion to prosperity, the year would occupy a place quite by itself

in the country's annals. In banking and

which previous high marks were not sur-

the year, so that the totals of business on

Agricultural.

One of the most striking of the achievements of 1912 was that represented in

hard set to move the vast quantity of The year's cotton and rice crops

sion dated from the early part of the year, growing more pronounced in the autumn, when trade of the country was

in greater volume than ever before, and

when, as a consequence, exchange of bank checks at the clearing houses rose

s particularly interesting about this is

was due altogether to the enlarged clear-

ings outside New York; here the exchange

Railroad traffic was greater than ever

pefore, and resulted in return of unpre-redentedly large totals of gross earnings

by the carriers. Net earnings, however

output was lighter.

Money.

Bureau of Inspection, Indiana.

F. J. PEARSE,

and six bituminbus mines.

Dept. Mines and Mining,

FISHERIES PLAY **IMPORTANT PART**

Statistics of Fish and Oyster Business Show Industry's Place.

MILLIONS NOW INVOLVED

In the subject of the most desting the subject of the subj

investment \$1,718,317, ovste ened or leased 41,878 acres, of

i-sea vessel fisheries centering and Gloucester, in Massachu-the most important of the extent and condition of each the fisheries have been gath-

having a value of \$5,024,497. Compare ne previous year there was an in of 241 trips, and 3,419,095 pound the quantity and \$191,156 in the valu n the quantity and \$191,156 in the value of fish landed. The greater part of this putput, or 109,926,119 pounds, valued at 2,803,319, was from fishing grounds lying off the coast of the United States, while 0,943,353 pounds, valued at \$877,462, were from grounds off the coast of Newfoundand, Greenland, and Labrador, and 44,32,896 pounds. 3,896 pounds, valued at \$1,343,716, were om fishing banks off the coast of the nadian provinces. Newfoundland her ring constituted 11.92 per cent of the quantity and 9.21 per cent of the value of the products of these fisheires.

Mackerel Catch.

The quantity of mackerel landed at Boston in 1911 was 2,558,694 pounds fresh, valued at \$142,114, and 131,200 pounds salted, valued at \$9,755, and at Gloucester 101,140 pounds .140 pounds fresh, valued at \$30,132, and ef oysters from natural 1.307,900 pounds salted, valued at \$101,895. The mackerel fishery as a whole yielded ated grounds is the most imprevious year, the total catch being about 7,837,380 pounds fresh and 1,326,600 every State from Connecticut pounds salted, against about 3,591,090 pounds salted in pounds fresh and 679,000 pounds salted in pounds fresh and 679,000 pounds salted in a the subject of the most de- 1910. The total catch of mackerel during

Gulf States in 1911 the number is engaged in all branches of the was 8.541, wages paid \$1.68,255, oyster grounds in 182.442,825, oyster grounds fresh, value at \$994,488 and 19.729,034 pounds salted, valued at \$886,490.

Haddock continued to be an important factor in the markets of Boston and Gloucester. The total amount of fresh is streams requiring only State action for the past year up to July 1 was 60.533,665. haddock landed at Boston and Gloucester the past year up to July 1 was 60,533,668, an locased 87,256 acres, of which were under culture, and the ysters from private and public regarded 3,917,819 bushels, valued 3. In New Jersey, Delaware, sylvania the number of persons

Pacific Coast Fisheries.

51 acres were under culture. The Pacific Coast cod fishery is now suitput of oysters was 3,271,738 represented by nine firms employing twenty vessels, thirteen of which sad or of San Francisco and seven out of ports on Puget Sound. The catch of cod in 1911 was reported to be 2,732,000 fish in number, or 10,772,000 pounds, the average weight of cod being reckoned at four pounds. The catch exceeds that of the preceding year by \$24,000 fish, or 3,296,000 pounds. The estimated value of the search pounds. The estimated value of the search pounds. The estimated value of the search pounds at the preceding year by \$24,000 fish, or 3,296,000 pounds. The estimated value of the search pounds at the place to discuss "retardation of development," and yet it may be of advelopment," and yet it may be of advelopment, and yet it may be of advelopment in full. Most of the development made to date falls into this class, and it should be noted that this power does not customarily displace fuel-general power, nor it is ever likely to entirely do so, for it goes into a market already supplied with full many in the place to discuss "retardation of development." is seemingly not the place to discuss "retardation of development in full.

Fourth—Finds its way to those enterprises where these requirements are most that this power, nor they are all replayment in full.

Fourth—Finds its way to those enterprises where these requirements are most that this power, nor they are all replayment in full.

Fourth—Finds its way to those enterprises where these requirements are most that this power, nor they are all replayment in full.

Fourth—Finds its way to those enterprises where these requ on Puget Sound. The catch of cod in 1911 was reported to be 2,793,000 fish in

The fishing grounds for cod are in Bering Sea and along the coast of Centrail Alaska from the Shumagin Islands covered the quantity and to Unimak Pass. Cod are, however, more

77 pounds of salted fish, valued schooners which heretofore had fished in that region confined their operations which the States only have control. \$2,443.215. The total for the chiefly to Flattery Bank, where large (b) Navigable streams, over which

most prominent of all classes of occupations which have aided agricul-

ve stock, amounted to \$97,000,000 on those roads for which subject were made to the Interstate Commerce Commission;

Miles operated by railroads making organized efforts to-

Miles.

61.8 174,156

more than one-half the mileage of the United States, and car-

ut one-half of the total tonnage. With the data for these companies

hasis, it is estimated that to per cent of the total freigh revenue of the

oads of the United States was derived from carrying grain, hay, cotton,

BLEAGE OPERATED BY RAILROADS MAKING ORGANIZED EFFORTS TO PROMOTE AGRICULTURE,*

24,521 26,634

Hydro-Electric Development in the United States in Year 1912

within the public domain over which the

control), exercises through its ownership

By JOHN H. FINNEY

Associate Member American Institute Electrical Engineers.

Hydro-electric development in the United States during 1912 has made, along certain lines, striking progress, both as to the size of plants installed and n the extent of the areas served by their transmission lines-this is especially that hydro-electric power is the foundatrue of projects of an intrastate character located on nonnavigable streams, tion of the establishment of such inand either put in operation during the past year or in satisfactory process of construction in all sections of the country—thus we see the splendidly designed plant of the New England Power Company on the Deerfield River; the notable plants of the Appalachian Power Company on the New River, supplying cheap power to all the important centers and mines in the Pocahontas coal district: The Tennessee Power Company serving in part many of the cities of that State; the Georgia Power Company with its great plant at Tullulah Falls, nearly completed; the Columbus Power Company at Goat Rook, Ga., on the Chattahoochie; the Pacific Gas and Electric Company, building its 275-mile a fight for the location of enterprises a fight for the location of enterprises season by 918,184 tons of beets and 157.751 ransmision lines from its station in the Sierras to serve important coast cities-

industry was 4,241, wages investment \$563,863, oyster herring, representing 21,161,333 frozen herring, representing 21,161,333 are leased 6,787 acres, and osters was 1,700,998 bushels, Up to July 1, 1912, a greater number of vessels fished for cod on the Grand Banks than for several years past, and considered the constant of the Mississippi River. The 200,000-horsepower plant of the Mississippi River. The 200,000-horsepower plant of the Mississippi River and Chattanooga at Hales Bar on the Tennessee River will be operating, it is expected, in 1913, and at Lock 12 on the Coosa River in Alabama some 60,000-horsepower will be applied to the Mississippi River and the constant of the Mississippi River and the coosa River will be operating, it is expected, in 1913, and at Lock 12 on the Coosa River in Alabama some 60,000-horsepower will be operating. opment is completely estopped and paralyzed.

The 200,000-horsepower plant of the Mississippi River Power Company at Keokuk is nearly completed; the 50,000-horsepower project near Chattanooga valuable and new commodities not other-

It is pertinent to inquire why real prog-the water (this being subject to State in the case of powers on nonnavigable of riparian lands, a controlling position, streams requiring only State action for even though it be an obstructive one.

the industry was 4,900, wages of in value.

new phases of economics, and the lack and often wide areas are served with of intelligent information in Congress and light, heat, and power from one hydroelsewhere as to the underlying and electric plant or a connected group of fundamental principles which must gov-

2. The lack of a definite and constructive policy which has resulted in a "reservation" without use.

This are supplied to fuel generated power, or directly competes with it. Most of the development made

streams of the nation a minimum of 35,-000,000 horsepower capable of commercial munity gradually grows in industrial im-

is was 6,800 trips, aggregating catches were made which found a market pounds of fresh and salted fish, at Seattle.

which the states only have control.

(b) Navigable streams, over which the Federal government has control through most wholly unrecognized. This type

Competition International. In this classification we see at once

latter is finally accomplished.

&c., and into this class we must put the electrification of steam roads when the

dustry-it is based on cheap water power used where developed-the industry could neither be established nor live except of the same month. with cheap power and here the water power competes not with steam but with other water power-a competition not confined to the United States, but is of nage and sugar output is far and away

When we realize that this development will take another many decades and that 40 to 50 billions of dollars will be required for just the development of he power with another 40 to 50 billions he problem that is rather startling, for this stupendous sum must be raised, not by the Government which so directly

its but by private capital. Billions to Be Raised.

Certain economic fundamentals are at once apparent when the problem is thus broadly studied.

First-That many billions of dollars must be raised. Second-That capital demands and must receive a fair return commensurate with

the risks involved. Third-Demands stability of employnent and repayment in full. -Fourth-Finds its way to those enter-

ur present limited and narrow view could be broadened with advantage to to Unimak Pass. Cod are, however, more of each species of fish taken on ground by the vessels discharging fares at each of the two ports in the calendar year 1911 was aggregating 36,578,99 pounds of salted fish, valued at \$2,575, a number of fares landed at number of fares land steam power, with, perhaps, five times this amount, not commercially possible of development now, but which will be f 92,760,100 pounds, valued at \$2,575,—
he number of fares landed at o laws for which Congress is directly re sponsible, and industry of the kind here (b) Navigable streams, over which the Federal government has control through the commerce clause of the Constitution of the constitution of the control through the commerce clause of the Constitution of the control through the commerce clause of the Constitution of the kind here in contemplated is paralyzed, or is seek ing establishment in other countries.

tion. (c) Streams located on public lands located in natural forests; and, water power for local use as the basis for the electro-chemical and electro-chemical and electro-chemical for the nation if it were not longer de-

There were during the year, 389 new ce-making installations, the aggregate f refrigeration per day, or, in other words, as much refrigeration as would e provided by the melting of that many tons of ice each 24 hours. It is also stated that there were about 66 new ommercial cold storage houses erected during the year, having an aggregate cold storage space of about 10,000,000

The Sugar Industry RECORDS OF 1912

Nineteen twelve has been a remarkable year in the sugar industry. In the beet sugar States, with one or two exceptions, the yield has been the highest cr. record, while in Louisiana the output of cane sugar has been the lowest re corded for a generation. The campaign is over in the latter State and the most conservative estimate puts the product at less than 170,000 tons, as against 316,00 tons in 1911, and 306,000 tons in 1910. Hundreds of acres of land in the cane par ishes were inundated when the levee broke last spring and the young cane was destroyed. A freeze occurred early in November and another the latter par

In the beet sugar States of the North and West, conditions have been almost uniformly satisfactory. The beet tonseason by 918,184 tons of beets and 157,751 tons of sugar manufactured.

Colorado in Front.

Colorado leads with a beet tonnage of finance the list of records was not so long, 1,683,158 and a sugar output of 223,181 yet even here there were few directions in Colorado leads with a beet tonnage of tons, exceeding 1911 by 719,158 tons of beets and 108,000 tons of sugar.

Next came California with a beet tonthe New York Stock Exchange fell far short of approaching the high figures of nage of 980,894 tons and a sugar production of 155,432 tons, exceeding 1911 by boom times. But saving in this respect 60,890 tons of beets and 22,402 tons of 1912 presents a series of supreme records sugar. which shows it to have been a remark

The returns from Michigan, which stands able period in industry, commerce, and third, shows that that State fell behind valuable and new commodities not other valuable. the 1911 figures somewhat, the figures

tobacco-ran beyond previous high marks Utah came fourth with a beet tonnage to such an extent that the railroads were defined as under the such an extent that the railroads were hard set to move the vast quantity of agricultural products from farm to market. The year's cotton and rice crops were the second largest on record, the were the second largest on record, the wheat and tobacco crops had only twice before been exceeded. Industrial expan-Next in order came Ohio, with its five

factories, two of them operating for the irst time during the past season. Wisconsin came next. Conditions generally were very satisfactory in that State, the beets worked exceeding 1911 by 5,000 tons, and the sugar production by

Nebraska and Idaho.

Nebraska and Idaho came next, the former with 213,000 tons of beets against 160,000 tons in 1911, and 25,150 tons of sugar against 19,200 tons the previous of checks did not rise to parallel previous year. Idaho showed a slight loss in beet records. tonnage, as compared with 1911, but an increase in sugar manufactured, due to a higher sugar content.

The eight States having a single facas a whole, and almost universally estab-lished a new record individually. Iowa, interior trade, but foreign commerce also,

rose to new heights; both merchandise exports and imports of the country ran far beyond the maximum over-sea trade of other years. Monthly as well as yearly trade records were broken; the twelve

w to h d s lc at a d df-al s, te e e d-	California. Colorado. Idaho. Michigan. Nebraska. Ohio. Utah. Wisconsin. States having a single factory: Ariz. Ill., Iowa, Kan., Minn., Mon., Nev.	17 4 16 2 5 6 4	Harvestell	Estimated yield yield shorts (2008) 1,085,088 213,0214 469,000 250,000	Estimated sugar 2 production short 4.321 155, 4.321 159, 614 25, 1.32 453, 1.32 59, 500,000	trade records were broken; the twelve months' total of exports and imports was \$4,300,000,000, as against \$3,600,000,000 in 1911. Incidently, it might be mentioned that England's merchandise trade also rose above all other years, although no single month's exports established an absolute maximum. Metal. Metal output was larger in volume than in any other year. Production of iron in the autumn rose to a volume unexampled at any other time in the history of that industry; production of copper did the same. In those lines of endeavor where records were established during 1912, the records did not mean that profits of business also were greater than at any previous these. In the majority of eases they
9-	Ind	8	49,800	466,710	63,637	vious time. In the majority of cases they
- 2	Totals—Amer		531,601 Sugar In	5,541,184 adustry, Cla	730,166 licago.	were not, and in that respect they qualf- fy a good many of the records. Remark- able activity of the iron and steel trade,

for instance, did not yield as satisfactory profits as in years preceding the 1907 panic, although at that time the rate of TREMENDOUS GAINS

Sault Ste. Marie, Mich., and Ontario lished both at New York and through for the season of 1912 shows an increase of 36 per cent over 1911 in total freight tonnage. Practically all articles show large gains, wheat increasing 79 per cent.

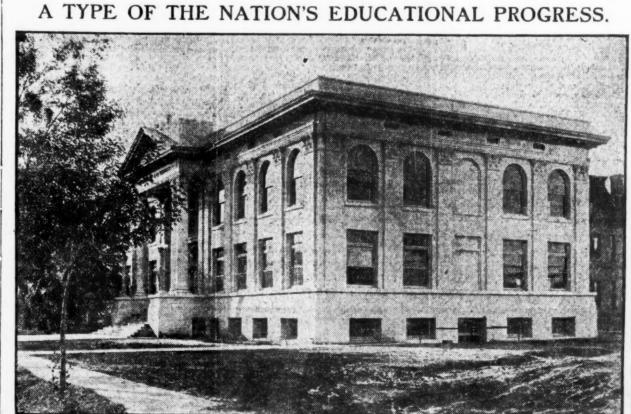
Sand Ontario in the United States. Loans, deposits, and cash holdings of institutions in the national banking system moved up to previously unparalleled figures. Surplus reserves failed to mount in volume with the other manufactured and pig iron 59 per cent, accounts. In Europe the gold holdings of grain 69 per cent, and iron ore 51 per the national banks of Germany, France cent. The official statement follows: and Russia established records. Money

cent. 116 ometal	Stateme	nr Tono.	WS.	and Russia established records. Money
Items,	Total T		Cent	supply of the nation—gold, silver, and notes—increased far beyond previous high
Vessels:				totals, the additions keeping fair pace
Steamers, number Sailing, number Unregistered, number	1,681	19,076 1,805 1,897	26 7 4	with the increase in gold supply and the increase in population. Enlargement in
Chregioterea, militaria.	1.000	1,004	-	the supply of capital, however, failed to
Totals, number	18.073	22,778	22	keep pace with the demands of trade,
Lockages, number	13,292	16.088	21	and consequently the demand of capital
Tonnage:		10,000		directed into new industry constantly
Registered, net	41,653,488	56,736,807	36	was for larger return New York Even-
Freight, short	53,477,216	72,472,676	36	ing Post.
Passengers, number	79,951	66,877	*16	**
Coal:				*
Hard, short tons	2,060,209	2,142,485	4	TATATA COAT
Soft, short tons		12,789,109	*4	INDIANA COAL.
Flour, barrels		8,052,153	19	
Wheat, bushels		174,086,456	79	Thursday Alex Aught alex accounts and
Grain, bushels	40,782,609	69,024,546	69	During the first nine months of
Manufactured and pig iron,				the year 1912, three new block
short tons		654,892	59	coal mines were opened up, and,
Salt, barrels	661,308	660,991		including other seams opened up
Copper, short tons		116,954	•12	in mines already in operation,
Iron ore, short tons	30,731,235	46,303,423	51	
Lumber, M. ft. B. M	18,754	7,713	*58	seventeen new bituminous mines,
Building stone, short tons	5,342	2,282	*57	and that during the fiscal year
General merchandise,				ended September 30, 1912, three
short tons *Decrease.	1,385,918	1,064,783	20	new block coal mines were opened

April 24 and closed December 16, 1912;

season, 237 days. The Canadian canal was opened April 24 and closed Decem-

ber 19, 1912; season, 240 days.



One of the group of five buildings of the Polytechnic High School at Phoenix, Ariz., completed in 1912. The group of five buildings cost \$250,000, and the equipment places Phoenix in the front rank for its educational facilities. The population of Phoenix is 18,000, but the school would be a credit to a city with six or seven times the

The faculty of this school are devoting special attention to vocational education, and arrange numerous series of lectures for this purpose. Phoenix firms handling office appliances have loaned to the commercial department of the school various types of labor-saving devices and other office equipment for the use of students. Graduates,

There is also an employment department in the school, which has proved very successful in bringing together the students and employers,

(d) Streams located on public lands stance, the making of steel or carborun- layed! RAILROADS AND FARMERS ABSTRACT OF S. 8033 (WATER POWERS) SHOWING CO-OPERATION BETWEEN GOVERNMENT AND

cut River above the village of Windsor Locks, in the State of Connecticut;

Authorizes relocation of Enfield dam, with discretionary power in Secretary of War to impose a reasonable annual that of transportation. The railroad companies are now making, and charge (not to prevent a reasonable return to the company), to be used in developing navigation on the Connecticut number of years have made, special efforts, apart from their strictly River; the dam is to be not less than 39 feet high, and to permit discharge of 1,000 cubic feet a second (except during five hours at night when discharge may be 500 feet). The company is required to build a lock to accommodate present and prospective commerce, and to convey the lock to the United States and to furnish free power for its operation. If ge percentage of the revenue which is due to the farm. During the year the grant is for any reason terminated, and renewed to other parties, the United States is to pay, or require its new June 30. 1010, the revenue from four classes of farm products, grain, grantee to pay, the reasonable value of the dam and plant, based on cost of replacement, and increased by not more than 10 per cent to cover initial expenses of company, &c. Status: Introduced and referred to Senate Committee o

CUSTOMS SERVICE TO BE **REORGANIZED BEFORE 1914**

Subports to Be Abolished, Doing Away with 150 Presidential Positions—Work of Commission.

Extract from Sundry Civil Bill, August 24, 1912.

The President is authorized to reorganize the customs service and cause estimates to be submitted therefor on account of the fiscal year 1914, bringing the total cost of said service for said fiscal year within a sum not exceeding \$10,150,000, instead of \$10.500,000, the amount authorized to be expended therefor on account of the current fiscal year 1912. In making such reorganization and reduction in expenses, he is authorized to abolish or consolidate collection districts, ports, and subports of entry and delivery, to discontinue needless offices and employments, to reduce excessive rates of compensation below amounts fixed by law or Executive order, and to do all such other and further things that in his judgment may be necessary to make such organization effective and within the limits of cost herein fixed. Such reorganization shall be communicated to Congress at its next regular session and shall constitute for the fiscal year 1914 and until otherwise provided by Congress the permanent organi-

zation of the customs service. ount of the great extent of the agricultural promotion work of the in soliciting new settlers and in encouraging the use of better farm-ods, the influence of railroad companies plays an important part in the

69.7

191,448

y ingovement for better farming. CO-OPERATION WITH GOVERNMENT AUTHORITIES,

154,504

rule, the efforts of railroads to promote agricultural education are service since 1739. supplied by a State agricultural college or experiment station or from in demanding the application of business cise, without the oversight of the naval principles to a strictly business function. nited States Department of Agriculture, while the business features of interprise, including advertising, are generally managed wholly or partly of the nation. It means that subports will entirely disappear from the official language of the Treasury, and aff existing ports and again the business matters, as well as a struction, are largely in the hands of Federal or State agricultural expert, and again the business matters, as well as gricultural instruction trains are examples of such co-operation of rail-with government authorities. The lecturers accompanying such trains stally members of the faculty of a State agricultural college or experts, that the Treasury will be in general made of the appraisement commission, consisting for E. R. Wakefield, chairman; J. D. Nevlus, J. W. Wheatley, J. A. Springstally members of the faculty of a State agricultural college or experts, that the Treasury will deal with one collector in each district, he having

with government, authorities. The lecturers accompanying smally members of the faculty of a State agricultural college or experts a State experiment station or the United States Department of Agricultural expert in the employ of the railroad company account of the train and assists the other lecturers and demonstrators.

FRANK ANDREWS, assistant Chief of the Division of Production and Distribution, Department of Agricultural expert in the employers.

It is expected to lead to an extensive restrangement of all details of appraise ment beginning with the invoice. Another commission is engaged in the exhaustive investigation into the composition of the district. There is to be, however, only one collector in a district, together with a number of ports in the district. There is to be, however, only one collectors equal to the total number of ports in the district. It means that over 150 Presidential offices, frequently used hitherto as political in the schemans and employers.

Assistant Chief of the Division of Production and Distribution, Depart-

The above paragraph, taken from the rewards, will be destroyed. The assignsundry civil bill of August 24, 1912, involves the most far-reaching changes that have taken place in the customs service since 1799. reasons. The naval officer will be super It means that both parties are agreed seded by a deputy auditor who will exer-

ICE AND COLD STORAGE.

ubic feet

Including all the various installation of refrigerating machinery installed dur-ing 1912, there were reported 1,394 such installations, the aggregate capacity of the machines being 39,809 tons of refrigeration per 24 hours.-Ice and Refriger-

1912 Mineral Production Breaks State Record—Coal Value Doubles That of 1907.

LARGE COPPER SHIPMENT

Utah has the unique distinction of rank in the production of gold, silver, copper, lead, and zinc.

Her standing is first in silver, third in lead, fourth in copper, sixth in gold, and

Figures of production for 1912, based upon actual statistics for the first eleven months and estimated for December, are, in round numbers, as follows:

				\$7,625,000
				24,000,000
Gold,	230,800 ounce	s, at \$20.6	W	4,700,000
Zinc,	20,000,000 pos	unds, at 6	.75c	1,350,500
	1			

This shows a considerable increase over 1911, and is the highest record of production of any year in the history of the State.

Smelting.

All this metal, except the zinc, was reduced from its ore by smelters within the State, as also was that from quantities of ores shipped in from adjoining States. Salt Lake City is to-day the most important smelting center in the United States; in fact, such ideal smelting facilities do not exist anywhere el in the world. The great variety of ores from the near-by camps, including Bingham. Tintic, and Park City, makes th mic mixing and fluxing of the min eral constituents m cheap and simpl process. This fact, coupled with the unlimited confidence in the continuances of the supply, has justified the building ous smelting plants near Salt Lake City.

Utah has the largest copper mine the world located at, Bingham, Utah.
Last year, 1912, there have been shipped out of Bingham 6,000,000 tons of ore-mor ore than was mined at any other known camp. Most of this ore came from the property of the Utah Copper Company each day in the neighborhood of 50,0 tons of ore and waste rock, an amount equal to 75 per cent of the material being handled by the Panama Canal.

Other Minerals.

There is known to exist in Utah possi bly as great a variety of commercial valuable minerals as can be found in an equal area upon the face of the earth The lack of sufficient population to fur nish market for many of the minera substances, coupled with the need o cheaper transportation, keeps down the production of the more common and cheaper materials. Utah has iron ore its comparable with those of the Mesaba range; coal beds to compare with those of West Virginia; asphalt with that f the Island of Trinidad; fire clays equal

rapid increase comes from the operation the State. Book Cliff coal fields. This coal field is one of the largest in the United States covering a known area of more than 10,000 square miles, with coal beds at ranging up to thirtyfive feet in thickness. Five years ago the Utah Fuel Com-

pany, with its mines at Sunnyside, Cas-New railroads have been built to the ew camps, and now there is pr

for the near future another railroad from the Utah coal fields into Provo and then to Salt Lake City. These roads mean great expansion of coal mining in the Salt.

There is harvested from the waters of the Great Salt Lake and the salt surrounding about 40,000 tons of table BUTTE FURNISHES QUARTER salt per year. The process of extracting the salt from the waters of the Great Salt Lake is as follows: The water is pumped by electrically driven centrifugal pumps into shallow ponds, where solar carries off the water, leaving the crystal of the city of Butte. Great progress behind. The evaporating season lasts about 100 days, during which time there is constant pumping of brine into the ponds, the aim being to keep the evaporated solution from becoming so concentrated as to deposit other min-When the season is over and the mother liquor is flushed out of the ponds there remains a layer of soft crystals from four to six inches thick, that covers the entire surface of the ponds. An average crop yield is 700 tons of salt per upon which to work in getting out the freshly deposited salt. The salt is read- ores amount to \$8,250,000, and then besides freshly deposited sait. The sait is readily shoveled up into windrows, and from
these into cars, and then dumped into
piles of about 1,000 tons each. The piles
become coated with a dense crust, and
may be left out in the open for years

with safety.

The sait is readores amount to \$8,250,000, and then besides
the big zinc properties that have been
opened up in the last few years, which
will not alone make Butte the largest
file safety.

Results of this movement may been
proper protection of the various wells at
file readiller safety.

Results of this movement may been
proper protection of the various wells at
file safety.

salt is put upon the market at different than Butte. degrees of fineness, according to the demand for packing, table, and dairy uses The brine of this Dead Sea of America

is a mine of vast chemical riches other than table salt. Sodium sulphate is pres ent in quantity, as is evidenced dur-ing winter months, when the temperature eaches 20 to 30 degrees Fahrenheit; for mineral crystallizes from the rine and is deposited over the lake bot om. Thousands of tons of this mineral, nirabilite, are piled upon the shores ov the waves during this cold weather, to be again dissolved and carried away when the warmer weather comes. Dr. Eugene A. Smith, of Alabama, Magnesium salts occur in quantity in the natural brine, yet they make up only a small percentage of the total solids.

Salt Bed.

In surveying for the Western Pacific Railroad the engineers encountered a most wonderful salt deposit in the form of an immense salt bed, covering an area of sixty square miles. The railroad built track directly upon this bed of salt. ranking first among the States of the Union in the diversity of production of to seven feet. It is perfectly white and looking to the safety of employes in the the precious and semi-precious metals. free from dirt or growth of any nature.

No other State stands so high in average At an average depth of twenty inches comfort in the camps. the amount of salt over the sixty square 100,000,000 tons.

Potash.

A large vein of alumite (potassium the south-central part of the State, near Marysvale, Piute County. The vein oc of the mineral, which carries 10 per cent his mineral other potash deposits have een recently reported.

he fron ore deposits, the sulphur, the gienic measures. antimony, the vanadium, the uranium, and even radum, which Utah can boast out as the 1912 production of these and many other mineral substances was quite limited, they will not receive attention. R. H. BRADFORD,

Professor of Metallurgy, Utah State School of Mines.

WISCONSIN IS SEEKING NEW IRON ORE DEPOSITS

The year 1912 opened with the deprewhich had formerly been very productive fact, not a great deal of work was done. Where gas is found, and the miners are Some of the lower grade mines were warned of dangerous conditions found in

f stock piles and an increase in activity. ts stock pile.

In the central part of the State the employment is clearly justified. ituation at Mayville and Iron Ridge continued about the same as in 1911. In the Baraboo district an important change

of the Island of Trinidad; fire clays equal to those of New Jersey.

Her salt occurs in such quantities as to place Utah in a class by herself, and her gypsum and building stones are unlimited in quantity.

Coal.

The production of coal during 1912 was more than 3,000,000 tons, an amount just double that produced five years ago. This rapid increase comes from the operation of the State with regard to the possibilities of the discovery of new from ranges. Geological conditions in this part of the State are in no way different from conditions in the northern peninsula of Michigan and in Northern Minnesota, excepting the discovery of new for the year 1909 76.7 per cent; for the year 1910, 50.3; for 1911, 45.8. This is a reduction of 54 per cent in the death rate. Since one-half of all the accidents in mines are caused by falling roof or coal, it is believed that fully 50 per cent of the total death rate—is first quarter.

Totals

ties in the State. The year has been one of high prices, and the mining industry here has had a very healthful tone. 12 1911, according to statistics collected jointly by the State Geological Survey and the United States Geological Survey, the district produced 99,000 tons of tie Gate, and Clear Creek, was the producer from these extensive fields. zinc concentrates and nearly 4.500 tons of Now there are a number of new combandary the metal content was \$3,689,850. In 1912 the metal concentrates was almost the same, probably a little bit

While Wisconsin has been one of the mportant iron producing States in the Injon, the value of its lead and zine rigidly enforced. products will very probably exceed the

value of its iron ore in 1912 W. A. HOTCHKISS, State Geologist, Madison, Wis.

WORLD'S COPPER SUPPLY

The year just drawn to a close has been the most presperous one in regard to the mining industries in the history has been made in the opening up and development of both the old and new properties. The pay roll for the mines tablished first-ald corps, which hold freand mining industry averaged over a million and a quarter a month, which in proportion to population was not equaled by any other city in the world. While the tonnage of ore shipped to the smelters has been heavier than for severa years, new ore bodies have been opened up to additional depth, which makes the ore reserve greater than ever. During the year more than three hundred and A salt lining from previous detwenty-five million pounds of copper was densely caked, serves as a bed produced, or one quarter of the world's supply. Gold and silver taken out of the

Lake City, prepare the salt for market. done within the past year, one-tenth of the crude salt is crushed, dried, and the properties in the mining zone are not vegetables, meats, &c., are either careful and the properties in the mining zone are not vegetables. winnowed while hot, in order to remove developed, and there is no city in the any effloresant sulphates. The refined world that has a more promising future

Yours very truly I. A. HEILBRONNER. Butte, Mont.

NORTH DAKOTA COAL A VAST RESOURCE

The coal fields of North Dakota cover an area of approximately 32,000 square miles in the Western part of the State, and the total tonnage of workable coal has been estimated at 500,000,000,000 tons. Some of the lignite seams are known to cover an area of from several hundred to over 1,000 square miles. Beds of coal six, eight, and ten feet thick are common, while those from ten to twenty feet are not rare. In Billings County alone there are known to be at least twenty-one coal beds over four feet thick, distributed through from 1.000 to 1,300 feet of strata and having an aggregate thickness of 157 feet. This coal is a brown lignite and, owing to rapid disintegration, serves best as a domestic fuel, and is extensively used in North Dakota and adjoining territory.

Lignite is especially well adapted to the manufacture of producer gas, and as the internal combustion engine comes into more general use the lignite deposits of North Dakota will have increased value.

The State Mine Inspector estimates the coal production of North Dakota for 1912 at 545,000 tons, or 9 per cent more than was produced in 1911, and a greater amount than has been mined in any one year during the history of the State A. G. LEONARD, State Geologist.

SAFETY OF LIFE

Describes the Many Methods That Prevent Accidents.

In discussing this subject, it is proposed

From a paper read before the Mine Safety Congress in Milwaukee by Mr. law, prepared by the Mine Casualty and rocks. It is conservatively reported by the United States Geological Survey as Operators' Association, may be taken as showing at the surface a width of ten feet and a length of 3,500 feet. This area regarding safety measures.

These features, according to Mr. Crockof potassium oxide, is sufficient to yield ard, are embraced under the general headings of inspection, discipline, perlepth. In response to the search for missible explosives, shot firing, shielding of machinery, fireproof construction, and, since safety means freedom from danger, Space will not permit a description of there also are included sanitary and hy-

Inspection and Discipline.

The State law provides for an inspector or every 2,500,000 tons of output. In addition to these, some of the larger ompanies provide company mine inspecors, whose duties are very much the same as those of the State Inspectors, except that they go over the mines more frequently, make more detailed inspec tion, and not only look after the ob rvance of the State laws, but after the mpany's regulations as well; and thus tion consequent upon low prices of iron they assist very much in the mainte n 1911 acting as a bar to any great in-ercase in activity. A number of the ore spector, with the concurrence of two mines in the northern part of the State tion of any coal mine whenever, in their judgment, there is sufficient gas and dust have been very nearly exhausted, and, in to cause an explosion. Places are marked shut down on account of low prices. The their rooms. It is now the general pracproducing higher grades of ore tice, as a guard against dust dangers, vere active throughout the year.

The improvement in market conditions ater in the year resulted in the shipping face of the rooms.

It is probably fair to state that there The Buckeye Mine, of Commonwealth, is a difference of 25 per cent in the which had been shut down for some time, renewed its mining operations the latter exercising rigid discipline and of one part of the year, after having shipped with lax discipline, and if an extra inspector can control this 25 per cent his

Timbering.

The question of timbering is also rehe Baraboo district an important that as a Baraboo district an important that as taken place in the opening up of the Cahoon Mine, just south of Baraboo. This larger companies requires timbers to be ceiving much attention, and one of the set at intervals of four feet each way All during the year 1912 diamond drift- whether the roof be good or bad. The Fir ing operations have been carried on in Vilas County, near the central part of the northern boundary of the State, and the following statements: If 190 be taken there is much interest all over the north- as representing the number of men killed portion of the State with regard to per 1,000,000 tons mined in 1908, we have

supplanting black powder and dynamite, but where black powder is still used The production of lead and zinc all every precaution is taken to secure comes from the three southwestern coun-In 1911 69 per cent of the coal was mined

Shot firing by electricity, though effi-cient as a safety device, has not been of Esmeralda County, which, during the cient as a safety device, has not been commercially profitable, because of mispast few years has been the richest gold fired shots and cost of maintenance. Much attention also has been paid to ireproof construction and all other appli- high-grade ore, and is now working on ances for eliminating fire risks, special the tonnage of zinc concentrates was all precautions being taken in connection

with the mine stables, Laws limiting the voltage of electrical equipment about the working places, along trolley lines and power lines are

Among the other steps taken by som of the larger companies to secure safety of the miner may be mentioned the ap-Intment of safety committees to keep special lookout for dangerous condi ns; a system of checking out which rves to locate a miner who is detained at his working place and to determine that the men are all out of the mine when firing takes place: a system of in struction by means of stereopticon lec-tures, &c., designed to warn the miner against the dangers which confront him

quent drills under the direction of the company physician. Rescue apparatus in the shape of helmets, pulmotors, &c., have been provided in a number of in-

Sanitation and Hygiene.

Appreciating the fact that safety measres should not be confined to the mines, the Alabama Coal Operators' Association secured the services of an engineer to make a sanitary survey of the camps. Results of this movement have been the ing mineral products for 1912 is as fol-

with safety.

Extensive salt works, operated by the Inland Crystal Salt Company, of Salt spite of the heavy development work Running water is supplied to many of the ried in glass cases or are properly pr

tected by screening. All stagnant pools are either drained or filled, and where this is not possible they are treated with oil. Tin cans, bottles, and other vessels which might hold water are removed, and these measures, to-gether with thorough screening, have reduced the number of cases of malaria in

1912, as compared with 1911, fully 50 per The medical departments of many of larger companies are now examining all school children with reference to defrom contagious diseases are barred from

Most of the larger companies have ash, and niter deposits, tellurium, and good school buildings, and also provide vanadium. for the recreation of their employes by picture shows, lyceum courses, in good approximate \$95,000,000. buildings which can be used for auditoriums.

Labor Conditions. In general, it may be said that these conditions are at this time fairly satisfactory, except that the supply is not actory, aquite adequate. By providing for the pulled adequate. By providing for the health and comfort of the miners' families and the proper education of the broken, realized. cure and keep the best classes of eployes. EUGENE A. SMITH, State Geologist.

WATER POWER DEVELOPMENT

The development and growth of West riginia's mineral production continued mabated during the calendar year just osed. The State shows an increase his year over the year 1911 in coal, petro-eum, the quantity of natural gas proiced and marketed, in carbon black rom natural gas, in glass sand, and in he production of limestone, cement, and Il forms of lime for industrial purposes. Immense quarries of a superior class of sandstone with a warm buffish tinge have recently been opened in Preston County, and this stone is now being used in the construction of a great cathedral and other notable buildings in that city. One of the notable events of the year state's power resources has been

connection with the development of the installation of a large hydro-electric plant on New River, and the transmission of the generated current to the coal fields of McDowell and Mercer Counties.

A corporation with ample financial resources is arranging to build other immense dams across the channel of that rapid stream between the Virginia line Frank E. Crockard, vice president of the Tennessee Coal, Iron, and Railroad Company, we have condensed the following of power, thus conserving an enormous quantity of the best coal in the world for other uses.

> marked the beginning of electric power development on the Cheat River, near Morgantown, where a million-dollar contract has been given for the construction of a giant dam, 85 feet high, and the work of excavation and placing of cofer dams is already well under way This dam is to be completed in 1913. It is only one of a series that will be constructed across Cheat River between the raging torrent, the intention being to develop many hundred thousand horse power, and incidentally controlling one f the sources of disastrous floods in the Monongahela River. Cheat is the only great river of the world practically unoccupied by railways, populous cities, and uch easy access to great manufacturing industries, since it measures but sixty miles from the first of these dams to either Pittsburg or Wheeling, I C WHITE State Geologist, West Virginia.

THE METALS OF NEVADA SHOW HEALTHY INCREASE

In an article written for the Mining and ientific Press and published in its issue January 6, 1912, I gave a comparative tatement, by quarters, showing the production of precious metals within the State of Nevada for the years 1909, 1910, and the first six months of 1911. For the purposes of this article, a repetition of these statistics seems to me advisable. with the addition of the last six months of 1911 and first six months of 1912.

The tonbage and value by quarters. from January 1, 1909, to June 30, 1912, are as follows:

st quarter ond quarter rd quarter orth quarter	Tons. 619,222 721,805 786,838 748,908	Value. \$6,343,635,19 6,891,057,58 4,920,837,03 6,814,001,37
Totals	2,906,823	\$24,969,531.17
st quarter	1910. 930,282 1,000.695 912,802 911,249	\$6,953,851.21 8,072,581.21 8,131,375.47 8,445,374.72
Totala	3,755,028	\$31,603,182,54
st quarter		\$8,435,543,30 7,917,205,33

8,264,886.85

Totals 2 417 844 \$17 371 619 06 will be noted right down the line. It is hardly expected that the last half of 1912 will show quite as favorably as the first will be a strong of the favorable will be a strong of the strong of the favorable will be a strong of the strong of the st and healthy growth by permissible explosives, an increase of half given above. The reason for this in per cent over the preceding year, is due largely to two causes. First: The producer of the world, has materially reduced its known bodies of extreme grade of much less value. The Nevada Consolidated Copper Company of White Pine County, that was expected in a large measure to take care of the loss in the value of the producn of the Goldfield Consolidated, sufferduring the month of October, which materially curtailed its production for the last quarter. However, there is no doubt

> very satisfactory increase in both ton-nage and value over the year 1911. L. F. ADAMSON, State License and Bullion Tax Agent.

CALIFORNIA APPROACHES

HUNDRED MILLION MARK The value of California's mineral prod-\$91,500,000, being an increase of \$4,000,000 over the production of 1911. Increased production undoubtedly will be shown in every branch, with the possible excep-tion of copper (owing to the fact that the "fume trouble" has not been satisfactorily solved as yet), but the value of the copper produced will show a large ncrease, due to the advance in the price eccived during the year, the average being close to 16 cents per pound, as against 12 1-2 cents per pound received in 1911.

A conservative estimate of the lead-

lows:	
Petroleum, 87,000,000 bbls., valued at	\$41,000,00
Gold	20,000,00
Cement	10,500,00
Copper	5,000,00
Crushed rock, used for all purposes	4,000,00
Brick, of all kinds	2,500,00
Borax	1,500,00
Natural Gas	1,560,00
Quicksilver	750,00
Silver	750,00
Lime and Limestone	750,00
Mineral Water, Salt, and Clay Pottery	1,250,00
Miscellaneous minerals	2,000,00

The remaining twenty-six minerals. sted as miscellaneous, which were duced in 1911, had a total value of \$1,800,- TENNESSEE WATER POWER 000, and many of them are known to have had a greatly increased output during the year just passed, probably far exceeding the estimated \$2,000,000. Some minerals which have had little

or no production in the past, and which have been receiving considerable attenfects of sight, diseases of the eye, ear, tion from capital recently, are: Bauxite, mouth, or throat. Children suffering for the manufacture of aluminum; various iron deposits throughout the State, barytes, feldspar, natural asphalt, pot-

club rooms, with bowling alleys, pool in the State is a refined product, it is it is reported from what is considered retables, reading rooms, &c., for white and often listed with the total mineral outliable sources that a 1,000-ton mill is now colored separately. Some have moving put, in which case the total figure would in course of construction. The erection

W. H. STORMS. State Mineralogist.

Rail Buying in 1912. Total rail orders placed in 1912 will capacity for one year.

emders, which will keep them busy at full operations until October next.

SEEN IN WEST VIRGINIA MINIG METHODS ARE IMPROVED

By Adoption of Better Standards.

It is perhaps not widely known that Illinois is third in rank among the min-ing States of the country, with mineral The chief minerals are coal, pe-

Normal growth and development characterized the chief mineral industries during 1912, but the coal industry was especially affected by new developments pany, we have condensed the following awha districts, as well as the Pocahon and the rapid adoption of better mining awha districts, as well as the Pocahon and the rapid adoption of better mining tandards. The coal production doubt-tas, Tug, and Guyandot, fields, will be supplied with this much cheaper form the Alabama field. The new State mining of polymers the polymers that the Pocahon and the rapid adoption of better mining and the rapid a less increased over the record output of 1911, which exceeded 53,000,000 tons. Although early winter weather was exceptionally mild, conditions were better than Along this same line, the year 1912 has marked the beginning of electric power levelopment on the Cheat River, near two or three million tons. It is of general interest to review the conditions as to improved mining practices,

in purchase of coal properties. Improved Mining Standards

Until the Cherry disaster in 1909 mining methods in Illinois were lacking in State line and the headwaters of that safety features. The mining investigating commission, appointed soon afterwards, ecommended new laws, which were promptly enacted. They secure a much higher measure of safety of life, and incidentally result in better equipment and better recovery of coal. The stronger mining companies are now adopting standards unheard of in Illinois ten years

or even five years ago.

The panel system of mining, which permits almost complete extraction of the coal, is displacing the room-and-pillar system, under which 40 to 50 per cent of the coal was lost. A single mine at Nokomis is operating under an even more advanced system, and is no longer regarded as experimental. The plan is o drive the entries to the remote boundarles of the property-unit, and then to emove all of the coal during the retreating period. A serious Mandicap to the method is the long period of deferred profits, but the conservation of coal and the diminished operating expense during the life of the mine commends the plan to a company which can make the initial

investment. The increased use of concrete and steel new mines. It affects not only the shaft lining, but all haulage ways, stoppings, and overcasts. Similarly, electric motives and undercutting machines are rapidly coming into general use under-ground, and a more substantial and efficient surface plant is being adopted to furnish power and to load the coal for market. One new feature of special in terest in a State where coal washing is extensively practiced is the spiral, drycleaning equipment at West Frankfort, which operates centrifugally, with excellent results.

Work Against Explosions. The campaign of education regarding iust explosions, led by the United States Bureau of Mines, and actively supported by the State Geological Survey and State University, is already bearing fruit. Remsought. One mine is equipped with bar-riers of stone dust, after the Taffanuel method; a dozen mines, more or less, are discharging exhaust steam into the air current so as to prevent excessive extrac-8.394,16.29 tion of natural mine moistures; still another company washes down the face and development of the quarries and the captures and the captures are the captures and the captures are the captures and the captures are th sides of each mining room and entry frequently with a strong stream of water. On side Ordinary sprinkling of roadways is done of the State during the past year,

creased use of "permissible explosives which, because of their extremely quick, short flames, are less liable to ignite gas and dust. The use of these explosives is almost universal in several counties, notably Franklin and Perry. Extension of this modern practice is desirable and

The training of men in rescue work idly, under State, Federal, and private stimulation. This work began with the tical demonstration at Urbana, by the ed the handicap of a serious labor strike United States Bureau of Mines and State agencies in co-operation. lowed by the establishment of three State stations equipped with rescue cars, that, despite these conditions, the State oxygen breathing apparatus, first-aid as a whole for the year 1912 will show a supplies, &c. More recently the coal companies themselves have learned the value of private equipments, and at least five have organized trained squads for use in time of fire or explosion.

New Mines.

An unusually large number of new nines commenced active operations, or vere under development during the year. That at Kincaid, in Montgomery County, promises to be unique as to magnitude and equipment. Concrete and steel will be used extensively instead of timber. It will be operated throughout by electricity, and will have cages suitable for oisting two cars at once. The normal tons daily. Other new model mines include that of the United Coal Mining of the Saline Coal Company, near

Purchase of coal lands has been under way far more actively than in recent years. A single financial group has options, which probably will be accepted. nvolving the purchase of more than 1,000 acres. Other investments on an even larger scale have been quietly ide, so that total purchases will doubtinclude several hundred thousand cres. Railroad interests have been unrstood to be active be active in several la FRANK W. De WOLF. Director State Geological Survey, Illinois.

COMING INTO RAPID USE

From the information that has come to the office of the State Geological Survey was started in Tennessee during the year 1912. The activity along most lines of mining was, however, fairly strong. The impetus given in the latter part of 1911 to prospecting for zine at Mascot, in the Holston Valley, continued through the year. The results apparently are While practically all the asphalt used factory to the company doing the work. of this large mill, after the ground has thoroughly prospected, indicates that the locality named will in the neafuture become a large zinc producer. The increase in the price of pig iron that came with the last half of the year be easily 5,000,000 tons. This total means gave an impetus to iron mining in the within 500,000 tons of this country's total western iron ore district of the State. This district extends across the State in This year all previous records will be the vicinity of the Tennessee River if present expectations are The large number of inquiries that have Rail mills have contracted come to the State Geological Survey re

spread interest in these sources

wealth. The inquiries cover all minerals that could be expected in Tennessee, but more information was sought on coal phosphate rock and iron than any other

The number of inquiries concerning vater power were very great. The actual vater power developed in 1912 and that hich promises to be developed in 1913 s in keeping with the rapid development of that industry in other States. During the year 1912 seven wheels, capable of Flow Is of Good Quality With Maxideveloping 29,200 horsepower, have been put into actual operation. The year 1913 will probably add to these wheels with a capacity of 100,000 additional horsepower. When all the projects now con templated or under actual construction at the present writing are in full operation the total water power developed within the State will be about 250,000 orsepower.

Some Statistics.

1		Quantity	Value
1	Product.	eroduct.	produ
	Parytes, short tons	4.106	\$5
-	Bauxite, long tons	3,265	11
	Brick and tile	******	1,157
-		1,210,453	876
3	Cement, barrels	50,220	105
	Clay, short tons	6,466,224	7,071
3	Coal, short tons	333,274	801
3	Coke, short tous		2,181
5	Copper, lbs	10,7,001	1,110
	Gas, gas-coke, tar, & ammonia,	* * * * * * *	
	Gold, fine ounces	567	11
f	Iron ore, long tons	467,356	624
-	.Iron, pig, long tons	324,381	4,033
-	Lime, short tons	88,252	272
1	Limestone, short tons	1,087,375	555
	Marble, cubic feet	484,095	853
1	Mineral paints, short tons	1.850	17
3	Mineral waters, gallons sold	1,016,456	87
r	Phosphate rock, long tons	542,761	1.918
2	Pottery		263
		57,232	31
3	Quartz, crystal-line, sht, tons.	01,202	0.1
9	Sand and gravel, cu. yard	630,663	400
1	equals 2,500 pounds		57
	Silver, fine ounces	105,660	1,621
	Sulphuric acid, short tons	279,878	
	Zinc, pounds	2,234,000	120
y			co4 101

\$24,191,884 A. H. PURDUE, State Geologist, Nashville, Tenn.

COLORADO SHOWS GAINS IN NEARLY ALL MINERALS

There has been greater activity in the olorado gold camps this year than in the two preceding years, though the production is not likely to exceed that being the leading one in the mid-conti of 1911. In the Cripple Creek district, the Roosevelt drainage tunnel has been oushed forward rapidly, and has already had a marked effect on the water level n the mines nearest to it, and the mining companies have taken advantage of these conditions and have begun, or prepared for active developments at lower levels.

In the silver camps there has been & ealthy activity, and in a few places aluable new finds have been reported. The value of the production of zinc for he State in 1912 has gone ahead of 1911 from \$3,000,000 to \$5,000,000.

production of lead has remained bout the same, though renewed activity two or three old camps gives promise better things for 1913. Production of copper has remained prac-

cally stationary for a number of years, o new finds having been reported. There has been considerable falling off n the value of the production of tung-sten, due largely to lower prices being paid for tungstic acid. The tonnage has remained about the same. Improvement in prices in December, of 1912, has reulted in greater activity, and conditions gas discoveries was the bringing appear to be unusually favorable for

State where uranium and vanadium are mined have shown great activity, and the production for 1912 will show a marked increase over that of 1911. New discoveries have been made at a number of

edies for dust dangers are eagerly has been a corresponding increase in the believed to be fraught with much significant the believed to be significant to be significant to be significant to be significant. manufacture of coke The increase in the production of mar-

R. D. GEORGE,

MISSOURI 1912 MINING BREAKING ALL RECORDS

State Geologist.

During the past year there has been greater activity in prospecting, developgreater activity in prospecting, development, and production in the various be approximately 400,000 tons. Operator mining industries of Missouri than for report general conditions as more satismany years and the total value of the factory than during the preceding year. output will be more than \$50,000,000 which approximately \$5,000,000 more than in

In this district all records have been State is confined to Ottawa County, broken, the total production of the the northeastern corner of the Stat Missourl, Kansas, Oklahema field being Preliminary reports from operators as Missouri, Kansas, Okrahoma held being valued at more than \$18,000,000 of which amount more than \$18,000,000 was proton duced in Missouri. This value is over value that of the preceding year. This \$3,000,000 greater than in 1907, the high- increase in value is due to two factorsest previous record.

showing a material increase in output. es that have not been worked of ore heretofore. in years have been re-opened and placed n a producing basis.

ough there has been no phenon nal increase in the price of lead, development has continued in the diss ison counties, and this district will record a greater output than in 1911 Prospecting was carried on chiefly in southern portion of the field in Madison county. Drilling in the known productive areas has developed exten- very much more active and satisfactory sions of the present known ore bodies ude that of the United Coal Mining The Kathryn mine near Fredericktown pany at Buckner, in Franklin Counhas been re-opened by the Federal Lead Company, by whom it has been leased Harrisburg; of the Ziegler District Col-liery Company, near Christopher, and of ing a large addition to their No. 3 mili the Buchanan interests at West Frank-fort.

Purchase of Coal Lands.

at Rivermines, having closed the old mill at Doe Run. This addition to the milling capacity will materially increase the output of the district during 1913.

New Copper Deposits.

The copper deposits of the State have attracted more attention than for many years. The Cornwall mines near Ste. Genevieve have been re-opened, the ore being shipped to Omaha, Neb. In Shannon county a new prospect known as the Jerk Tail has encountered challong of the St. Louis the contract one and development work in the central Ozark country has considered. copyrite ore and development work is in the central Ozark country has cobeing done. In prospecting iron ore on tinued uninterruptedly as the output the Copper Mountain Copper Company's consumed by the Sligo furnace locate roperty near Sullivan additional copper at Sligo, Crawford county.
re is reported to have been encountered. As a whole, the mining industry The coal mining districts have been Missouri is to-day in a most flourish free from labor troubles and the pro-duction will exceed that of former years. Deep drilling near Princeton has con- materially. firmed the strike made a few years ago,

FIELDS FOUND

mum Daily Production of 12,000 Barrels.

80 WELLS OPENED IN 1912

The year just closed has been, on the whole, satisfactory to the mining inte ests in Oklahoma. The distinguishing feature is the much healthler tone, ompared with that industry during At the close of 1911 there was a mark financial depression prevalent over Southwest in general consequent failure of crops, coupled with the n widely spread financial stringency. D ing 1912 there was a very marked recovery from the conditions of 1911 ale most lines, but some branches of the dustry are still suffering rather seve from the conditions of 1911. The infection upon which this paper is based sists in preliminary reports from lead operators, and hence the figures and e mates contained herein are understood be only approximately correct.

The most significant feature of the and gas industry of Oklahoma 1912 was the discovery of new and gas fields. Among these the chief that which lies east of Cushing, in Wes ern Creek County. Here in March first well drilled proved to be a phen nal success. The close of the year versed about 75 or 80 wells completed. productive but three. A few proved be very good gas wells. The oil is of g quality, and this, with the high in

Petroleum and Natural Gas Industr

nent field.
Second, perhaps, only to the Cushing field in interest is the discovery of deep sands at Cleveland, at the of Cushing. Development has been s ing on at the Cleveland field for years or more, but not until 1912 were t deep, rich sands discovered. Wells of 5 barrels' capacity are common in the pos with 12,000 barrels as the maximum initial daily production.

production, marks the Cushing

Eastward Extension.

Another very marked feature of the was the eastward extension of the GI pool. Drilling is very active, and void 300 or 400 barrels daily initial capa are common. South of the Glenn p Okmulgee County, several wild-cat proved successes, and these wells very active operations through mulgee County, and at Cushing Cleveland good gas wells have These new discoveries opened up. timely, as tending to offset the rapid pletion of the older gas fields of the gion. Not the least significant as 6,000,000 gasser northeast of Coalgate Coal County. This is far removed The districts in the western part of the any present development, and is her of unusual significance. Good gas w also are reported at Ada, in Pon County. Significant in the year's dev opment is the discovery of gas ne Duncan, in Stephens County. Just wh the future has in store at Coalgate, The coal production has increased by and Duncan is a matter of conjectu 500,000 tons over that of 1911, and there but these new discoveries are general

nificance for the State. At Ponca City, in Kay County, som ble over 1911 has been marked, and the promise for 1913 is brighter than ever before. The output is limited only by the running up to 800 barrels. Gotebo also for the year. Here, in sands as shallo rable successful prospecting for as 500 feet, wells of fair to good capac been done in the western part have been brought in. While the fi has not yet reached large dimensions, the fact of discovery of oil widely separated from any present development is of the highest order of significance.

Coal. As in the petroleum and natural gas ndustries, so in the coal industry th has been a wide, marked advancement during the year. The increase in output

Lead and Zinc.

The lead and zinc development of the the the northeastern corner of the State. st previous record.

This district has never recorded more ubstantial development, every camp rich, deeper run of ore some distance below that which has been the chief source

Portland Cement.

The reported general financial stringency throughout the South during 191 worked very hard on the Portland co ment industry. The past year, however, is witnessing a good advance over conditions of the preceding year. In summing up, it should be said that

the mining and mineral industries of the State during the past year have been than any year since 1909. The present outlook is very promising and encourag-D. W. O'HERN, State Geologist, Norman, Okla.

and the lower coals of Harrison and Mercer countles will no doubt become a factor in the Missouri output. Missouri produces over one-half of the barytes mined in the United States.

A. BUEHLER. State Geologist, Rolla, Mo.

FLORIDA PHOSPHATE

Tampa's foreign and coastwise shipment of phosphate for year 1912: Total shipments of phosphate......963,440 tons. The following foreign shipments were made: Belgium42,690

I am inclosing also the report of the phosphate shipped from Boca Grande for the year 1912: Total tonnage shipped (phosphate)......295,167.

L. P. DICKIE, Marine Reporter, Board of Trade of Tampa. states, acconcludes religion of 9 ent company

New Englar Middle.... South Atlan Southern... Central Western...

Total ... United Stat Average d

December November. October... September August ..

COA Total Producti New Record However.

All previous

coal in the I

1912, if both

taken into

Below

ction of har at of many tures for the t yet availal e month's shi December oments of amounted smaller t the last nents we the quan shipments d approximat 1912 was 6 ude the ng was th 11.000,000 to brought result of austed the as that the ugh the la at their

NEW MEXICO

ents to 51.

year close

SHOW , compiled fr ta obtainable.

he most cons made during tic operations ore is mir over 5,000 to large concent w miles awa of the smelt

icing the ol rated distric ntain ranges north, throu her southwar number of 1 copper are at the very Petroler

Copper Conta Fe Count

doval Cour New lassified Smelting pig iron w hundredportance

but few Stat a greater reach to a coal of ? important to its prox Mexico. iken all in a during the ye prosperous ilses to be the

The latest estin continental Un re at 96,496,000 figure was rtment experts total money ntry on that ount per capita

96,496,000

BANK EXCHANGES IN 1912.

slume of bank clearings in 1912 far exceeded those of any prer. reflecting the remarkably improved conditions in all commertrial and agricultural lines, the total at all cities in the United
ording to the statement compiled by R. G. Dun & Co., which
clurns from 128 leading centers, amounting to \$174,189,507,180,
9.3 per cent as compared with the year before and of 6.6 per
ared with 1910. The details for the past three years follow:
1912 1911 1910

New England	\$10,363,812,939 13,115,415,467 4,680,084,943 4,193,629,753 22,106,389,561 7,580,747,720 6,365,458,543	1911 \$9.621,880,372 12,222,704,909 4,296,799,994 8,363,679,055 20,092,321,366 6,762,619,224 5,670,371,190	1910 \$9,578,115,049 12,230,260,524 3,872,494,099 8,091,429,707 19,925,418,587 7,062,478,192 5,357,933,428
Total	\$73,445,538,928	\$67,030,376,110	\$66,118,129,586
United States New York City	\$174,189,507,180 100,743,968,252	\$159,403,188,845 92,372,812,735	\$163,392,629,678 97,274,500,092
Average daily: Describer November September August July June Mary Jeriff Mary Jacobs	\$617,290,000 641,291,000 647,804,000 546,243,000 488,844,000 536,940,000 545,489,000 576,129,000 556,181,000 581,213,000	\$561,296,000 583,375,000 529,886,000 501,996,000 567,240,000 520,730,000 530,174,000 494,252,000 496,739,000 555,243,000 577,175,000	\$525,961,000 565,571,000 540,512,000 453,911,000 426,103,000 531,331,000 531,82,000 531,035,000 539,348,000 555,887,000 685,549,000

GEORGIA MINE PRODUCTS

part, as follows:

STRONG FACTOR IN SOUTH

The quarterly report of Prof. S. W. McCallie, State Geologist, to the ad-

isory board of the Geological Survey of

Georgia, at a meeting held in the Governor's office on December 11, was, in

COAL TRADE.

ntal Production in 1912 Established New Record-Anthracite Output. However, Was Considerably Below Previous Year.

gious records for the production The marble quarrying industry in the the United States were beaten vicinity of Tate, Pickens County, is in both hard and soft coal can quite a flourishing condition. The value the month of December are vious year in the history of the marble

were 61,969,885 tons.

mantity sold to local tradeees be put at 3 per cent of
nix-a proportion that has
imately, in recent years—then
like table output of anthracite. ately, in recent years—then betable output of anthracite nearly 500 hands.

The clay industry shows a healthy growth. The value of the clay output growth. tons in 1911. This does not coal used in the operation of the State last year was \$2,636,380, which was an increase of 4.12 per cent over that of the previous year. With the exception of West Virginia and Texas, Georgia an

in the summer and fall. large companies continued to ncentration of shipments ers of the bauxite deposits, but also to

W MEXICO MINERALS

Programme	Value.		11
and twist	\$5,097,000	1	61
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ding stime, lime, &c			
ral waters			L
whiseus reducts			(
			17
o of mon-metallic products	\$5,628,850	\$5,628,850	1
	\$1,330,370		r
	1,217,450	1	
The supplied representation	4,091,000		0
			t
			11
	#11 FOR		1
of the own man from	7 100		

To f promising finds of lead in volume of production and in value. If you will, but not necessarily thickes and think. It's the meat on the plant of production and in value in volume of production and in value. n these ranges, all of which every door of the city of Al- hand, producers and dealers disposing of

is greater activity at the presny previous time in the history The chief localities un- prosperous year in all lines for 1913. Mexico. The chief localities unolitation are at several points in
as Valley, the "bad lands" near
ri, Seven Lakes, in McKinley
and near the Hagan coal field
aval County. Active drilling is
tion in each of these fields. Oil
found in small enantities in the
diley and at Seven Lakes. The
I to have a paraffin base in each
fields.

New Mexico has important
an exceedingly pure iron ore.

Prosperous year in all lines for 1913.

The production of anthracite coal will
show a decrease from the maximum output of 90.464.067 short tons in 191 of about
\$,000.000 tons, due, at least in a large
degree, to the suspension of work in
April and May, pending the settlement
of the wage scale. On the other hand,
the output of bituminous coal will show
a marked increase over that for 1911, the
total being approximately 165,000,000 tons,
as compared with 144,750,000 tons in 1911.
According to the Connellsville Courier,

Pennsylvania generally held their own or showed an increase. In some portions of the State there was a very marked activity in the brick industry, especially fire brick, which responded rapidly to the charges in the increase. FAYETTE A. JONES, idly to the changes in the iron and stee

Albuquerque, N. Mex.

96.496,000 IN THE U.S.

the state of the runous prices the pacity, owing to the runous prices which have prevailed for a number of which have prevailed for a number of years. The stone industry in general showed a slight increase, subject, of course, to local conditions. on that date, \$3,350,727,580, the

A PROPOSED COURT OF FINANCE TO RANK WITH SUPREME COURT

VERY STRIKING FINANCIAL SUGGESTION OF YEAR 1912

A Statement Prepared by a Member of a Famous Banking Firm for Consideration by the Newspapers and Financial Forces of America.

An urgent appeal to the people of the country to disregard prejudice and politics in considering the nation's monetary problems, and that attention be given the subject commensurate with its great importance, was made in an address before the Finance Forum of New York in December by John Harsen Rhoades, senior member of Rhoades & Co., bankers of New York City, and chairman of the committee

on education of the New York State Bankers' Association.

"Who Shall Control Our Financial Destiny" was the title of Mr. Rhoades' presentment of his views. After sketching the difficulties that attended all efforts to enact the Aldrich plan into law, with a very interesting story of the suspicions that surrounded that measure on the part of the people, the speaker sugnitive form.

Reserve, with authority to accept or to fourteen. Of this number six shall be appointed to act as Governor will have the power to expel. It is shall be appointed to act as Governor they who will control the discount rate —raise it to check speculation in the gested an amendment to the basis of Senator Aldrich's bill, the most interesting feature of which, from the popular standpoint, is the suggestion that the board of governors of the National Reserve or Bank of Banks, at Washington, to be created by law, should be appointed by the President of the United States along the method of procedure adopted for the appointment of members of the Supreme Court and should shall also be as ex-officio members the seas are disturbed—lower it when the financial shall also be as ex-officio members the seas are calum. The question before not be elected by the bankers. Mr. Rhoades offers the suggestion that this board should be composed of fourteen members, to be chosen by the President, one-half from the Eastern section of the country and one-half from the Western, the zones to be divided by a line running north and south through the center of the Currency, making a few, but who shall be the few, and south through the center of the currency making a few, but who shall be made, so far as lies are called the content of the currency making a few, but who shall be made, so far as lies are called the content of the currency making a few, but who shall be made, so far as lies are called the content of the currency making a few, but who shall be made, so far as lies are called the currency of the fourteen in all. With the exception how they shall be made, so far as lies are called the currency of the resolution of the currency making a few, but who shall be made, so far as lies are called the currency of the resolution of the currency making a few, but who shall be made, so far as lies are called the currency of the resolution of the currency making a few, but who shall be made, so far as lies are called the currency of the resolution of the currency of the resolution of the currency of the resolution of the currency of the section of the currency of the resolution of the nation shall be in the hands of the currency of the currency of the currency of the section of the currency of the resolution of the currency of the resolution of the currency of the section of the currency of the resolution of the resolution of the currency of the resolution of population. Of the fourteen, it is proposed that six members shall be practical bankers, six to be appointed from the industrial, commercial, farming, and other interests and two to be academic students of banking. In addition, it is advocated by Mr. Rhoades that the Secretary of the Treasury, the Secretary the work of the National Reserve, to of the output of the service of the nation.

The value of the work of the National Reserve, to the work of the National Reserve, to the work of the nation.

The work of the National Reserve, to the service of the nation.

Mr. Rhoades that the Secretary of the Value of the service of the nation.

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Mr. Rhoades that the Secretary of the Value of the service of the nation.

Mr. Rhoades that the Secretary of the Value of the service of the nation.

Mr. Rhoades selects the name "The Court of Finance" as the designation of this body, and he pre-

the members of the court, my idea the members of the members of the court, my idea the members of the the members of the court, my idea will shipments, being estimated at about surveying industry. The Georgia, the being that compensation should come all working full force of hands, and are all working exists and that it is inevitable. In closing, he says:

sents arguments from the viewpoint of an experienced banker to show that centralization of power already

About two years ago-the date is immaterial-I was discussing banking and currency reform with a leading Wall Street banker. If I mentioned his name, you would recognize him at once as a man of influence and ability. I said to him, "Why doesn't your firm take more interest in banking and currency reform? If we are to have real reform, you know as well as I that it is the big, able man who must put his shoulder to the wheel." He replied, "Are you aware tion of West Virginia and Texas, Georgia and Texas, Georgia now leads the Southern States in the value of her clay products. In the value of paper clay, Georgia stands well ahead of any State in the Union. The down to about 6,000,000. It is supply was not equal to be supply was not equal to be cause of the falling off in the result to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the Aldrich plan into practical shape?" I was surprised at to licking the value of the valu that a partner in our firm has given many hours of his valuable time

different mines now in operation, the our circular prices, the "independent" coal when for "independent" coal when formed than they had been in Movember. The close of on the Great Lakes was folion the Great Lakes was folion the Great Lakes was folion to the discovery of the house for on the Great Lakes was folion to the discovery of the house for on the Great Lakes was folion to the formulation of shipments are normal than they had been in that region means, from a concentration of shipments ers of the housite densits, but also to by a concentration of shipments the Eastern markets, and the outside Eastern markets, and the outside Eastern markets, and the citizens of the surrounding country, there are to be scattered throughout the nation clusters of local savoiations of banks. These clusters are to be corded together, as it were, and the outside to meet the needs of consumers and West this winter.—Financial and Wilkers, White Country of the previous year. The following third the production of New Mexico for the production of the surrounding country, there are to be scattered throughout the nation clusters of local shortage, and labor country, there are to be content the citizens of the surrounding country, there are to be scattered throughout the nation clusters of local shortage, and labor country, there are to be content the citizens of the surrounding country, there are to be content the citizens of the surrounding country, there are to be content the citizens of the surrounding country, there are to be scattered throughout the nation clusters of local shortage, and labor country, there are to be scattered throughout the nation clusters of local throughout the nation clusters of local throughout the nation clusters of local stream through the outside the citizens of the surrounding country, there are to be scattered throughout the nation clusters of local savoications of banks. These clusters are to be corded together, as it were, and thought the nation clusters of local throughout the nation clusters of local through the form that in giving this power to the droughout the nation clusters of local through the form through the form and have g the shoulder, and said to those men assembled from all parts of the

Let me tell you another story: Just argument that must be considered, not Banks at Washington. been, except in a very few cases, no marked increase in prices, and all conditions seem favorable for a continuous prosperous year in all lines for 1913.

The production of anthracite coal will show a decrease from the maximum out put of 90,046,097 short tons in 1911 of about 8,000,000 tons, due, at least in a large degree, to the suspension of work in April and May, pending the settlement of the wage scale. On the other hand, after an May, pending the settlement of the wage scale. On the other hand, alter and may pending the settlement of the wage scale. On the other hand, alter and may pending the settlement of the wage scale. On the other hand, alter and may pending the settlement of the wage scale. On the other hand, alter and more thank and advanced it.

I have spoken thus warmly because the warmly because the same period a year ago.

Under the Aldrich plan the method of election of this board, to all intents and purposes, is identical with the approach that the cloquence to impress upon them the danger that confronts them. I am not preaching patriotism now, but self-interest and preservation. I know been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time. Knowledge bonds, and the loan had been standing for some time that must be continued the above this should be decition of this board, to a all as rapidly as turned out. There has "Is not my credit sufficiently good to not jump to our conclusions. a marked increase over that for one reads over that for one restorated being approximately 185,000,000 tons in 1911.

According to the Connellsville Courier than 60 per cent metallic enterprise. The local demand of exceeding the greatest output of coke on recent enterprise. The local demand of exceeding the former maximum output of 1906.

The Aldrich plan, as revised, was slightly in just to bleed me?" He replied: "I agree that such rates seem extortion-more than 3,500,000 tons, an increase of 20,000,000 tons in 1911.

The Aldrich plan, as revised, was slightly in just to bleed me?" He replied: "I agree that such rates seem extortion-more than 3,500,000 tons over that of 1911 and the greatest output of coke on recent the sufficiently good to warrant a lower rate than 50 per cent? The Aldrich plan, as revised, was become something so different from that contemplated by capital surplus, profits, deposition, and it is the duty of ord, exceeding the former maximum output of 1906.

Centralization Favored.

The Aldrich plan, as revised, was leaving in existence 7,431 banks with aument that plan has become something so different from that contemplated by capital surplus, profits, deposition, and it is the duty of the great than 50 per cent was subsequent to its approval by many State of the pain of the American people enterprise. The local demand of control in the hands of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of control in the hands of the few. Control is, has been, and of con

Beginning to Learn.

industry. The demand for paving brick was unusual, and many contracts re-mained unfilled at the end of the year. was unusual, and many contracts remained unfilled at the end of the year. Notwithstanding this fact there is but little increase in the brick-making capacity, owing to the ruinous prices which have prevailed for a number of lature was used by Treasury Deeple as a whole was unusual, and many contracts remained unfilled at the end of the year. Notwithstanding this fact there is but little increase in the brick-making capacity, owing to the ruinous prices which have prevailed for a number of years. The stone industry in general people as a whole that interest in the project be revived and the more conspicuous flaws eliminated.

I ask that you take with me the preliminary step of dividing the plan into two sections. That section which showed a slight increase, subject, of the subject, but we accomplished little until after the crisis of preliminary step of dividing the plan into two sections. That section which the functions and operations and operations are desired and the more conspicuous flaws eliminated.

I ask that you take with me the preliminary step of dividing the plan into two sections. That section which the functions and operations are desired at the end of the year. Notwithstanding this fact there is but through the center of population, which the interest in the project be revived and the more conspicuous flaws eliminated.

I ask that you take with me the preliminary step of dividing the plan into two sections. That section which the functions and operations are desired. ress has been made that there has now deals with the functions and operative been presented to the American peo- processes of the National Reserve we of Finance—shall be reduced from the picion. It is they who will set the nual dividend of 9.17 per cent on the capi-

RICHARD R. HICE.

Reserve Plan Described. As you know, under the Aldrich

Haratoney, Yamun, Foresti, Hank, Lamp-ton May, McLariffic opticioney, Labon, Wall, and Section of the Sendary, Section 1997. Which is a correct of the Country in the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Country in the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Sendary, Section 1997. Which has recently been developed in Chattagos Country, the work of the Country, the second of

the process of elimination and amend-ment that plan has become something.

We hear much to-day of the Money leaving in existence 7,431 banks with au-

say centralized power I mean central lawful make one qualification, that such enormous power, power great cates, hold over 80 per cent of the board from the Eastern section of the board from the Eastern section of the country and one-half from th It was not until the panic of 1893 purpose this evening is to suggest an that we American people as a whole amendment, with the earnest desire by a line running north and south by a line running north and south.

State Geologist, ple a well rounded plan of monetary shall not discuss. For that matter it unwieldy number of forty-five, as rec- standard of membership in the National tal stock.-"The American Banker."

INCORPORATIONS IN 1912.

Papers filed in the Eastern States in December for companies with an authorized capital of \$1,000,000 and over represented a total of \$200,100,000, making the total for the year \$2,130,172,000. This is larger than the preceding year by \$392,740,600, and is the best showing made since 1906, when the total was \$2,297,970,000. The large companies incorporated in States other than those of the East for December amounted to \$10,350,000 and for the year \$417,099,000. Charters taken out by other companies with an individual capital of \$100,000 or more, but under \$1,000,000 during the past month represented \$41,850,000, which brought the grand total for 1912 up to \$3,223,245,000 against \$2,889,381,150 in 1911.

Following are the comparative figures as specially compiled by the Journal of Commerce and Commercial Bulletin of companies incorporated in the Eastern States during the last three years with an authorized capital of \$1,000,000 or more:

tal of \$1,000,000 or more:			
ter or dilandian as	*1912	1911	1910
January	\$210,520,000	\$356,219,000	\$187,180,000
February	166,300,000	172,400,000	169,468,000
March	159,578,000	139,910,000	362,659,600
April	281,457,000	58,690,000	254,085,000
May	140,284,000	163,195,000	139,980,400
June	289,170,000	152,550,000	231,319,400
fuly	253,518,000	195,850,000	112,020,000
August	164,500,000	87,350,000	107,500,000
September	115,050,000	77,004,000	58,100,000
October	169,495,000	124,220,000	93,695,000
November	154,200,000	150,593,400	119,023,000
December	200,100,000	159,540,000	132,587,050
Total	\$2,295,172,000	\$1,837,431,400	\$1,967,617,450
Revised.			

of the ex-officio members, these men within our power, subservient to the shall devote themselves for life, to the will of all. exclusion of all other interests, through

to suggest the proper compensation for the twelve months, including scattering

that truth among the people. Because the exponent of a plan is unknown or unpopular should not mean that his appointed for life in the specific of this generation, J. P. Morgan, and it he specified the structure of the service desired. The ablest financier of this generation, J. P. Morgan, appointed for life in the problem with statisticians is whether the calendar year \$12 will exceed this high mark for twelve consecutive months.

The figures for the last seven calendar appointed for life in the problem with statisticians is whether the calendar year \$12 will exceed this high mark for twelve consecutive months. unpopular should not mean that his argument is unworthy of your consideration. I repeat my metaphor. It is the meat in an argument that must be digested, not the man who prepared it.

The ngures for the lappointed for life a governor of the National Reserve by the President of the United States, subject to confirmation by the Senate, is a very different man from J. P. Morgan elected to that not by the hankers. post by the bankers.

Two Objections

Let us now consider what objections plan, in order to secure centralized control of the bank reserves of the country, there are to be control of the bank reserves of the many to offer. I will mention two. country, there are to be scattered throughout the nation clusters of local that in giving this power to the President six weeks of the year have re-

Election of Governors.

Put on your thinking caps, my friends, and think. It's the meat on the platter that must be digested, not the man who advanced it.

Election of Governors.

We are now ready to consider the election of the board of governors of the National Reserve or Bank of Banks at Washington.

Election of Governors.

We are now ready to consider the election of the board of governors of the name who advanced it.

We are now ready to consider the election of the board of governors of the name period last year. Exclusing the same period last year. Exclusing the same period last year. Exclusing the same period last year. Exclusion of the corporation tax, which does not have to be paid before June 30, 1913, the internal revenue, collections during the plant it is if to a man to pile up money all his life, and die, and have his children suffer? I wish the same period a year ago.

Under the Aldrich plan the method.

ord, exceeding the former maximum out of the State is increasing in the State in the Union which is mining in the State in the Union which is over substituted. There was the coal supply of the State in the Union which is over substituted. The coal supply of the State in coal supply of

IRON AND STEEL.

I propose a scheme somewhat similar to that in vogue in Germany, whereby there shall be a stockholders' committee of five, with whom the courty shall consult from time to time. It has been suggested that the appointing power be placed in the hands of the American people. It is a subject upon which we must train the available intellect of the country, for it is one which concerns not alone the bankers but the people as a whole. Upon it every American citizen has the right to speak, and to expect our national schoolmaster, the newspaper, to assist him in forming an honest opinion, and if he speak the truth to spread that truth among the people. Because the every desired. The ablest finance is impossible in advance to lay out a hard and fast working formula; but that in vogue in Germany, whereby the them a stockholders' committee of five, with whom the courty which also establishes a new high record. Pittsburg district labor scarcity during November and December and De

Yea	r.								Tons.
1906.									25,307,191
1907									25,781,361
									15,936,018
1909								**********	25,795,471
1910									27,363,567

1912	(86	tir	nat	ed					29,750,000
We	ba	se	t	he	es	stir	nate	e that th	e prese

the hands of men who have no private interests to promote, but solely one deposits and as investments.

During the fiscal year 1912, the national banks paid dividends aggregating \$120.

The court of finance, which I propose, is the supreme tribunal to whom the American people must entrust the financial destiny of their nation. These and surplus. During the last thirty-four wears the hanks have paid an average and surplus.

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912:

MILLING INDUSTRY

Careful Review of the Industry to 1912.

The year 1912 was one of pro nounced inequality in the wheat supply, which was possibly the chief matter of moment to the milling industry of the

The soft winter wheat crop of the Middle West was fully 100,000,000 bushels short of a normal production. while the spring wheat crop was the largest ever recorded, and away yond the most sanguine expectations Kansas raised 80,000,000 bushels o wheat in 1912, the hard winter wheat crop being uniformly good in the hard wheat States of the Middle West. The total wheat crop of 1912 was

730,267,000 bushels, harvested from 45,814,000 acres. The total winter wheat crop was 399,919,000 bushels harvested from 26,571,000 acres, which shows that about 6,000,000 acres seeded to winter wheat were abandoned

The total spring wheat crop was 330,348,000 bushels, produced on 19,-243,000 acres. The remarkable feature of this crop was that with 1,000,ooo decrease in acreage the crop was approximately 140,000,000 bushels excess of the preceding year. Flour Production.

Unfortunately there are no accurate igures to show flour production in the United States from year to year. Many milling sections report outturn of flour, but many mills refrain from details o their yearly production, and there no record from thousands of mil located at interior milling points. Our export flour trade is far below former years, but there has been a healthy ocrease in domestic markets, equiva lent to about one barrel per capita for our increase in population, which approximately 2,000,000 a year.

wheat crop, there has been some va riation in prosperity, but it may assumed that the milling industry in 1912 was prosperous and on a substantial basis, with failures few and far

keting of the wheat surplus to the points of accumulation practically complete. The corn crop movement will be extraordinary, as the crop is official. extraordinary, as the crop is official-estimated at 3,124,764,000 bushels, metal was wasted or else sold unsegrethe final estimate, which far exceeds sated and hence at a fraction of its real

reference to other waste products. They were not considered capable of being The winter wheat acreage seeded for the crop of 1913 is estimated at 32,387,-The seeding progressed under fa-

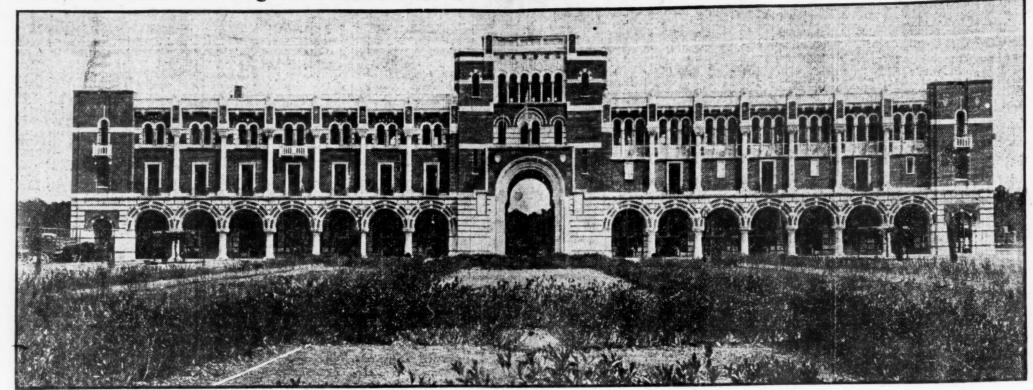
PRISON LABOR ADVANCES MADE DURING 1912

Administrative development to meet their kind. The result has been to bring the last session's legislative enactments marks the phase of the prison labor movement dominant in the year 1912. The movement dominant in the year 1912. The very framework of the State governments has had to be adapted to the efficient business methods required for the better adjustment of the interlocking functions of prison production for the better adjustment of the interlock-ing functions of prison production for it does practically the whole world in its departmental consumption. Discussion of the varying methods to this end has been had at the House of Governors (Richmond, December), at the American Prison Association (Baltimore, November), at the American Institute of Crimpal Law (Milwaukee, September), and nal Law (Milwaukee, September), and at the National Conference of Charities and Correction (Cleveland, June). Enlisted in the actual readjustment have Wisconsin, the efficiency commission of Massachusetts, the Board of Adminis-tration of Ohio, the Board of Control and and Iowa, a special Prison Labor Com-Boards of Charities in Virginia and California. Governors, unaided by such agencies, in Arkansas, South Carolina, and New Mexico, have resorted to the pardoning power to remedy the evil

bility for its own use of the prisoners on State lands, in State mines, and as operatives in State factories; while in market, with its disastrous effect upon rices, tends to give place to the use of self in its manifold activities. Improve ments like these in the reduction and distribution of the products mitigate evils but in no way affect the economic injustice always inherent under a slave system. The payment of wages as a cording to returns filed with the Bureau of Navigation. On July 1, 1912, the ship-policy for a business organization. In preparing to create this working force for the permanent usefulness and yards reported that 120 steel vessels, agreewing busily employed than in a decade, according to returns filed with the Bureau of Navigation. On July 1, 1912, the ship-policy for a business organization. In preparing to create this working force for the permanent usefulness and growth of the Chamber of Commerce, the country is divided into four geographical divisions, known as Eastern, has made its appearance, together with the first suggestion of right of choice allowed to the convict in regard to his occupation. These statutes will be same time a year ago. The influence of the coming opening of the Panconception of the wage as a privilege, common to England and Germany, and the wage as a right as it exists in France. The development of the idea of the right of ware used or the idea of the right of ware used or the idea of the right of ware used or the idea of the right of ware used or the idea of the right of ware used or the right of ware right or the right of ware used or the right of ware right the right of wage, used as it is with the movement towards the governmental work and workshops, cannot fail to stand out in significance when viewed

from the standpoint of the labor moveprison labor shown in recent legislation is toward more efficient production b the elimination of the profits of the lessee; more economical distribution of the products by the substitution of a preferred market, where the the middlemen are eliminated, of the unfair competition with the products of free labor in the constitution an finally the curtailment of the slave sys tem by the provision for ages and cho of occupation for the man in per servitude. E. STAGG WHITIN, servitude. General Secretary Nation mittee on Prison Labor.

Administration Building of William M. Rice Institute, Houston, Tex., Endowed with \$10,000,000.



which opened its doors last fall at Houston, Tex., with an orig-

gated and hence at a fraction of its real value. A similar condition existed with reference to other waste products. They at sixty-five identical cities for half-

Few institutions of learning have begun their existence under | Marsh Rice, a native of Massachusetts, but for many years a resi- | tute, and engaged experts to begin upon a inal fund for \$10,000,000 for endowment and maintenance, with ters, science, and art. During the long period of litigation that leation exercises and to open the institution to students. the foremost educators in the nation aiding in planning its fu- followed Mr. Rice's death, the trustees called Dr. Edgar Odell ture, with picked men for administrative offices and faculty, and Lovett, a professor in Princeton University, a man of wide expe- laboratories for instruction and investigation in physics, chemwith a vigorous, growing country in which to prosper and wield rience and lofty aims, to aid them as president in realizing the latry, and biology, and in the application of these sciences to the its influence. It is small wonder that the opening of this insti- founder's aspirations. President Lovett was instructed to learn arts of industry and commerce. In drawing the laboratory plans tution should be attended by noted educators from all over the all he could about other institutions of higher learning before the institute authorities had the active co-operation of men like world, as well as official government representatives. Dr. P. beginning his own. He traveled all over the world in the interest Prof. Ames, of Johns Hopkins; Prof. Conklin, of Princeton; Prof. Claxton, United States Commissioner of Education, was deputized of the new enterprise, and returned in the summer of 1909 from Richards, of Harvard, and Prof. Stratton, Director of the National as special representative of the Bureau of Education at the ceremonies, and Dr. Kendric C. Babcock, specialist in higher education. Meanwhile the trustees had secured 300 acres of land on the

BARREL OF CALIFORNIA OIL

vear, of producing wells in the State was 5,800, 5955,539,414 and the daily average product from these 624,125,795 averaged 246,000 barrels. The output for

554,948,250 the year 1911 was 80,000,000 barrels. There-509,899,409 723,547,019 ceding year was 10,000,000 barrels. The

output by months during the year is as follows, December output being esti-

in the

Chamber of Commerce of the United States of America

pointment of efficient standing committees and the organization of committee work. The Chamber must have

teemen without the serious and thoughtful advice of men from all parts of the country, for every committee

must in its personnel represent all sections and opinions. Furthermore, service on these committees is truly a na-

tional duty, and calls for men of force, with broad minds and generous impulses, added to the ability and will-

Western, North Central, and South Central. Then it was decided that each committee should be comprised of

twenty members, five from each geographical division when the subject is of equal interest to all divisions, but

Western States, to Denver, Colo.; for the Eastern States, to New York City; for North Central States, to Minne-

apolis; for South Central States, to Dallas, Tex. Each group will be furnished from the Washington headquarters

with all the available bibliography on the subject, and a careful study will be made by each group independently of

other groups. In framing a report, however, the four groups will come together, and with reasonable assurance

two men located in the smaller cities sufficiently near to the populous centers to make occasional meetings possible,

and thus secure the counsel and co-operation of the men in lesser cities, whose influence in the Chamber will form so prominent a part in every effort we may put forth; second, by omitting from certain sections representa-

tion upon particular committees when there can be no sectional viewpoint, and where, if the plan were rigidly

The schedule below will illustrate the care with which the great problem of committee work is being elab

Northern Central Division

Detroit, Mich.

Southern Central Division

Cincinnati, O.

(Northern Central)

Washington, D. C.

adhered to, an overload would be put upon members located in these two geographical divisions.

Eastern Division

Modification of this plan may be made by first appointing on divisional committees groups of five, one or

In order that these divisional groups may meet and together study the subject assigned them, it is proposed

with a departure from this plan when the dominant interest lies in certain divisions more than in others.

problems which will be brought to the attention of the Chamber for consideration and action.

By far the most vital matter before the Chamber of Commerce in 1913 will be the completion of the ap-

Neither the Board of Directors nor the officers felt competent during the year 1912 to choose these commit-

It was recognized that committees must be representative of all sections, yet, if so widely distributed as seldom

259,210

During the year 1912 the cutput of the cutpu

FOR ENTIRE POPULATION

such auspleious circumstances as the William M. Rice Institute, dent of Houston. Before his death, in 1900, Mr. Rice made far- tectural plan that would embody in succeeding years the purposes reaching plans for the establishment of a nonpolitical and non- of the institute. By the fall of 1912 building operations had prosectarian institution, to be dedicated to the advancement of let- gressed so far that it was deemed advisable to hold formal ded-Conspicuous among the buildings projected will be the special

The institute will be open to both young men and young Rice Institute was made possible by the munificence of William extension of Houston's main thoroughfare as a site for the insti- women, and there will be no charge for tuition and no fees.

LUMBER STATISTICS.

While the industry of lumber manufacture is widely distributed throughout the United States, a production during the calendar year 1911 having been re-ported from every State but one, namely, North Dakota, it is interesting to note numbers, 90,000,000 barrels, the greatest output in the history of the industry of the State. It is one barrel of oil for that nearly 36 per cent of the total cut was reported from the five States of Washington, Louisiana, Mississippi, Ore-gon, and North Carolina, ranking in the order named. Futhermore, it will be obevery man, woman, and child in the Inited States, says the Commercial News of San Francisco. These figures are based on the assumption that the product dur-ing December aggregated the same as served that two of these five States are cent years become the principal centers of lumber production in the United States, their combined output in 1911 forming 68 per cent of the located on the Pacific Coast and three in the South, which regions have in re-November, while the indications are that the output will exceed that month in dally average production. The number of producing wells in the State was 5,800, 68 per cent of the total cut for

Softwoods and Hardwoods.

The reported cut of softwood lumber measure, or 78.1 per cent of the pro-duction from all woods, while that of hardwood lumber amounted to 8,100,819,-000 feet, board measure, or 21.9 per cent. The slightly larger proportion (68.68) per cent of the market value of of the total production supplied by soft-woods during 1911 as compared with the prietors; minus office and outside sa woods during 1911 as compared with the prietors; minus office and outside salfigures for the preceding year is a logical aries and "overhead" expenses, renewals result of the drift in the lumber industry or repairs of apparatus, chemicals, and 231 822 to regions which are chiefly coniferous loss or softwood.

Leading Species.

12,896,706,600 feet, board measure, or 34.9 ment imported into the Don per cent of the total; white oak, the leading hardwood, contributed 3,098,444,000 of 1906. This taking down feet, or 8.4 per cent.

PHOTO ENGRAVING RECORD

The estimated lowest aggregate marand line etchings) produced in the com-

\$756,000 being for the polished copper, and \$268,051 for the polished zinc sheets.

The wages and the metals combined 1911 was 28,902,388,000 feet, board aggregated \$6,640,051; which is a shade under 31 1-3 (31.32) per cent of the sales of the mounted engraved copper and (68.68) per cent of the market value

> total sales amounted to \$6,522,331; being much more than a third (the selling price proportion) of the copper plates sales, on account of 32,611,656 square inches more of risk being works. nches more of zinc being used.

The total weight was 2,160,000 pounds of the copper sheets used; and the zinc Pig iron, tons long.... weighed 276,823 pounds more, namely 2,436,823 pounds. The proportionately greater excess of zinc by area, over the increase by weight, is due to the zinc being lighter The standard sheet of zinc weighs two pounds less than the earnest and self-sacrificing members on all committees, fitted by training and experience to pass upon the great same size sheet of copper; the lighter metal being eleven-thirteenths (11-13) the weight of the heavier.

WILLIAM HUGHES,

ESTABLISHED IN YEAR 1912

ket value of photo engravings (halftones mercial process plants of the United

228,221,592 Square Inches

past few years, that the expenditure of 2912 should be 14 per cent larger than in 1905, only sever years ago, and some idea of the recuperative power of the trades may be had from the fact that expenditure of the recuperative power of the trades are in 1912 were one-third larger than they were in 1908.

The five leading species cut in 1911 were of copper, and 130,446,624 inches of the opper, and 130,446,624 inches of the recuperative power of the trades are mounted to 78,498,210 barrels, a daily average of 238,318 barrels. The stock of the opper trade of the copper of t

Publisher "The Engraver and Elec-

contrast to the conditions protein of 1912. At that large increase in production sumption, which had marked industry annually for twen seemed to have had a serious the production of Portland the United States in 1911 was 78,530,000 barrels, as compared 76,550,000 barrels in 1910, an only a little over 2 1-2 per cen moreover, were very unsa averaging only 84.4 cents per ba being sold at less than the duction, in order to keep th

RETROSPECT AND

At the beginning of 1912, industry reflects the buoya general business situation, ever before, has an Old Year

production and distribution ities; prices and profits char "good times;" capital availa

quate amount and at easy worthy enterprises; labor,

gaps in its ranks, employed

This picture represents a

to a New Year so rich a crops; a vast v

FORECAST OF THE

CEMENT INDUSTRY

As the year advanced, tinct improvement was no of over-production-a facto steadily depressed the ma heard. caught up with output; and tions—the West particularly reported, due in large shortage. While no officia production of 1912 will be

During 1912, approximatel ountry were engaged in th nighway construction; and of the concrete type in its va were laid. involving an outlay of \$10,000, spoken of by the automobile turers of the country.

One factor contributing perity of the American mill the 50 per cent reduction. period June 12 to October ; nadian duty of 52 cents per dian imports of Amer the figures showing 794,000 four months ended Sep compared with 328,000 ame period of 1911. The the prairie provinces of Man katchewan, and Alberta, wher from about 3,000 barrels in 191

300,000 barrels in 1912 ALFRED S. JOHNSON

AUTOMOBILE OUTPUT.

The following table shows the crease in the production nicles in this country, together w

	preceding reat.						
	Cars.	No. of					
Year-	built.	Curs.	ent.				
1903	9,000						
1904	12,000	3,000					
1905	22,500	16,000	59.60				
1906	30,000	7,500	31.3				
1907	39,000	3,000	20.00				
1908	50,000	11.000	39.6				
1909	108,000	58,000	116.5				
1910	173,000	65,000	60.3				
1911	206,000	27,000	15.4				
1912	340,000	140,000	41.5				
There are in the	country	now	almos				
ON manuelantrone .	a anton	V-11-					

Metals, 1911 and 1912.

estimates for 1912 for coal and th

*U. S. Geological Survey figures. Joint estimates Bureau of Mint and Geo Survey. §U. S. Geological Survey estimates "Iron Age estimate.

PRODUCTION OF COPPER IN UNITED STATES

	(In Pounds)		
State	1910	1911	1912
Alaska	5,008,171	19,412,000	23,600,000
Arizona	299,606,971	300,578,816	357,773,703
California	45,793,894	36,806,762	29,867,43
Colorado	10,127,012	8,474,848	6,800,00
Idaho	6,216,461	3,745,210	5,038.00
Michigan	221,400,864	216,412,867	231,629,48
Montana	286,242,403	271,963,769	209,125,00
Nevada	63,877,500	65,385,728	81,816,00
New Mexico	3,632,351	1,518,288	26,174,00
Utah	125,042,381	138,336,905	136,372,15
Washington	***************************************	* * * * * * * * * * * * * * * * * * * *	1,233,00
East and South	18,195,450	19,656,971	18,915,61
Other States	1,106,525	1,564,207	4,492,620
Totals	1,086,249,983	1,083,856,371	1,242,836,02
		-Engineering and	Mining Journal.

THE AMERICAN FEDERATION OF LABOR.

bor, included the following statistics in his annual report, made at Rochester recently:

It is exceedingly gratifying to report the extension and growth of the American Federation of Labor, as well as the membership of affiliated organizations The American Federation of Labor issued 260 certificates of affiliation (charters) during the fiscal year ended September 30, 1912, as follows:

Department 1 International unions ... 2 State federations 2 City central bodies 57 Local trade unions149 Federal labor unions ... 49

Samuel Gompers, President of | At the close of the fiscal year the American Federation of La- there were affiliated to the organization:

Departments 5 International unions ...112 State federations 41 City central bodies560 Local trade unions434 Federal labor unions ...156

The average membership reported and upon whom per capita tax was paid by the affiliated organizations to the American Federation of Labor during the past year was 1,770,145, an increase over the number reported for 1911, which was 1,761,835. On September 30, 1912, the membership of affiliated organizations was 1,841,268.

The Method for Selection of Committees

orated:

BUILDING IN 1912.

The total expenditure at all cities in

1912, as shown by the monthly tables, was \$908.589,403. a gain of 6.8 per cent over

1911, and a total slightly larger than was recorded in 1909, owing to the smaller

umber of cities included in the latter

A very precise measure of the past

early and annual periods back to and

cluding 1905. This permits of the fol-

347,035,084 315,256,543

350,229,623

Here it will be seen that the greatest half year in the country's building his-ory was the first half of 1909, while the

mallest six months' total recorded was

in the first half of 1908, or just one year

point to the dulling influence exercised upon the building trade by the panic of 1907. It speaks well for the permanency

of the building trades, after the wonder-ful progress in city building during the past few years, that the expenditure of

These extremes within a year

\$300,823,254

341,048,658

312,489,260

530, 322, 028

680,551,650

mated:

owing comparisons:

postal savings system completed its second year, and had 12,823 offices, estimated Supply of Rhode Island, Governor's Commission in New York, Maryland, and Lovernor Supply of Rhode Island, Governor's Commission in New York, Maryland, the condensate of the control of the condensate of the cond Com-state tal savings funds, and pay 2 1-2 per cent Cali-on deposits, 2 per ent of which goes to the depositors in the postal savings sys tem and one-half of 1 per cent is used to meet the expense of the service, which is expected to become not only self-supporting, but a source of profit to

a year.

SAVING WASTE PRODUCTS.

used. But now this is changed. Scrap metals are carefully gathered and sold after segregation and classification, or

else are sent to foundries to be rework-

ed by commercial smelters and then re-turned to the government to be further

utilized. And other by-products are as carefully watched and handled after

absolute waste to what is called by the diplomats "an irreducible minimum." A

Years shows definite tendencies toward the State's assumption of its responsiings banks amounted to \$1,074,980, which is 25 per cent more than the issue made the largest aggregate application, \$194,440.

AMERICAN SHIPYARDS.

The shipyards of the United States dur- ingness to study. ing the current fiscal year will be more busily employed than in a decade, accondition. Such legislation construction or under contract to tion. These statutes still waver uncertain manner between the 80,000 tons are building for use through tons, are building.

Petroleum.

An estimate of the production in 1912 and a comparison with the product in 1911 is given below: nent.

In a word the economic progress in Production of percentage in the United States in 1911 and estimated production for 1912. that their findings will fairly represent the general sentiment of the country.

n (Barrels of 42		
State.	1911.	1912.
California	81,134,391	87,000,000
e Oklahoma	56,069,637	52,000,000
f Illinois	31,317,938	28,000,000
a Louisiana		10,000,000
f West Virginia	. 9,526,474	19,500,000
e Texas	9,526,474	10,000,000
Ohio	8,817,112	8,500,000
	. 8,248,158	8,000,000
Indiana		1.200,000
- Kansas	. 1,278,819	1,300,000
New York		700,000
Kentucky	472,458	500,000
Colorado		200,000
Other States		500,000
	990 440 701	220 200 000

OMESTIC COMMERCE Federal and State Regulation Statistics and Standards Boston, Mass. Milwaukee, Wis. Dallas, Tex. Tariff and Taxation New York, N. Y. Chicago, Ill. Atlanta, Ga. (Eastern Div.) Industrial Workers Boston, Mass. Cincinnati, O. FOREIGN COMMERCE: North American—European Trade New_York, N. Y. Minneapolis, Minn. Galveston, Tex. Latin-American Trade Philadelphia, Pa. New Orleans, La. St. Louis, Mo. (Southern Div.) Charlotte, N. C. Providence, R. I.

Seattle, Wash, (Western Div.) San Francisco, Cal. (Eastern Div.) Statistics and Standards Philadelphia, Pa. Chicago, Ill. Springfield, Mass. (Eastern Div.) Consular Service St. Louis, Mo. TRANSPORTATION AND COMMUNI-Railroad Canal and River (Interior) Pittsburg, Pa Memphis, Tenn. Omaha, Neb. Post-office Telegraph Telephone LEGISLATION:

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The Committee on Committees has as its chairman Mr. H. E. Miles, of Racine, Wis. During the First Annual Meeting Mr. Miles will be located at the New Willard. He will appreciate receiving information and securing names of those nominated by the various localities to service on appropriate committees. Mr. Miles is gathering all this preliminary material in order that the president and directors of the Chamber of Commerce of the United States may act readily and with the fullest information.

NATION'S BUSINESS

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